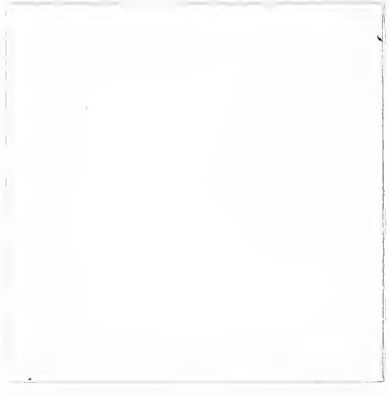


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THE ARCHITECTVRAL RECORD

AN ILLUSTRATED MONTHLY MAGAZINE OF ARCHITECTURE
AND THE ALLIED ARTS AND CRAFTS.

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JULY—DECEMBER

1918

PUBLISHED BY
THE ARCHITECTURAL RECORD CO.
115-119 WEST FORTIETH STREET, NEW YORK CITY
841 MONADNOCK BUILDING, CHICAGO
1211 ARCH ST., PHILADELPHIA
BESSEMER BUILDING, PITTSBURGH
114 FEDERAL STREET, BOSTON

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Business Manager: J. A. OAKLEY

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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY
THE ARCHITECTURAL RECORD COMPANY
115-119 WEST FORTIETH STREET, NEW YORK
F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.

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ENTRANCE PORCH—COUNTRY HOUSE OF
FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
WALKER & GILLETTE, ARCHITECTS.

THE ARCHITECTVRAL RECORD

VOLVME XLIV NVMBER I

JVLY, 1918

The COUNTRY HOUSE of FRANCIS L. HINE ESQ

— GLEN COVE. L.I. —

WALKER & GILLETTE. ARCHITECTS

By Charles Over Cornelius

IN the professions, honeycombed though these are with specialists, we still do find the general practitioner facing and solving new problems as they present themselves and occasionally putting to shame the specialist by incursions into his own particular field. This is true particularly of architecture; since here the specialist most frequently develops in direct response to the demands of a clientele and as a result of a definite successful accomplishment arising conspicuously out of a broad general experience. The judgment to be passed upon the work of a specialist is perforce limited in its scope. His problem is definitely set; is solved by methods made familiar by constant use, and is judged with corresponding stringency.

With regard to the general practitioner the case is somewhat different. He must be prepared to attack each new problem from a fresh point of view, to take advantage of all special features of the location and surroundings and to render himself susceptible to the influences—dramatic and historic—which are present in the site. In accordance with the extent to which he takes advantage of these suggestions is he to be acknowledged a master of his art. This provides us with the corollary that in so far as he fails to make the most of the suggestive features inherent in the problem, just so far should blame fall roundly on his shoulders.

Among general practitioners in the profession of architecture there are few whose works have embraced in an equal number of years so many and varied subjects for study as have those of Walker & Gillette. Their work has been domestic,

commercial and ecclesiastical; it has been urban, suburban and rural. Into the last named category falls the country residence of Francis L. Hine at Glen Cove, Long Island.

Country life in America, in the main modeled upon that of our English forebears, has had a gradual and uninterrupted growth dating from pre-Revolutionary times, when the great estates of the Atlantic seaboard were the centres of a brilliant social life. These establishments provide the antecedents from which has developed the American country life of today with its cognate architectural expression. A distinctly modern phase of this development is the week-end residence, characterized primarily by easy access from the city by motor and rail. The gently rolling country of Long Island provides for New York City a wealth of building property, thoroughly adapted to the demands of this type.

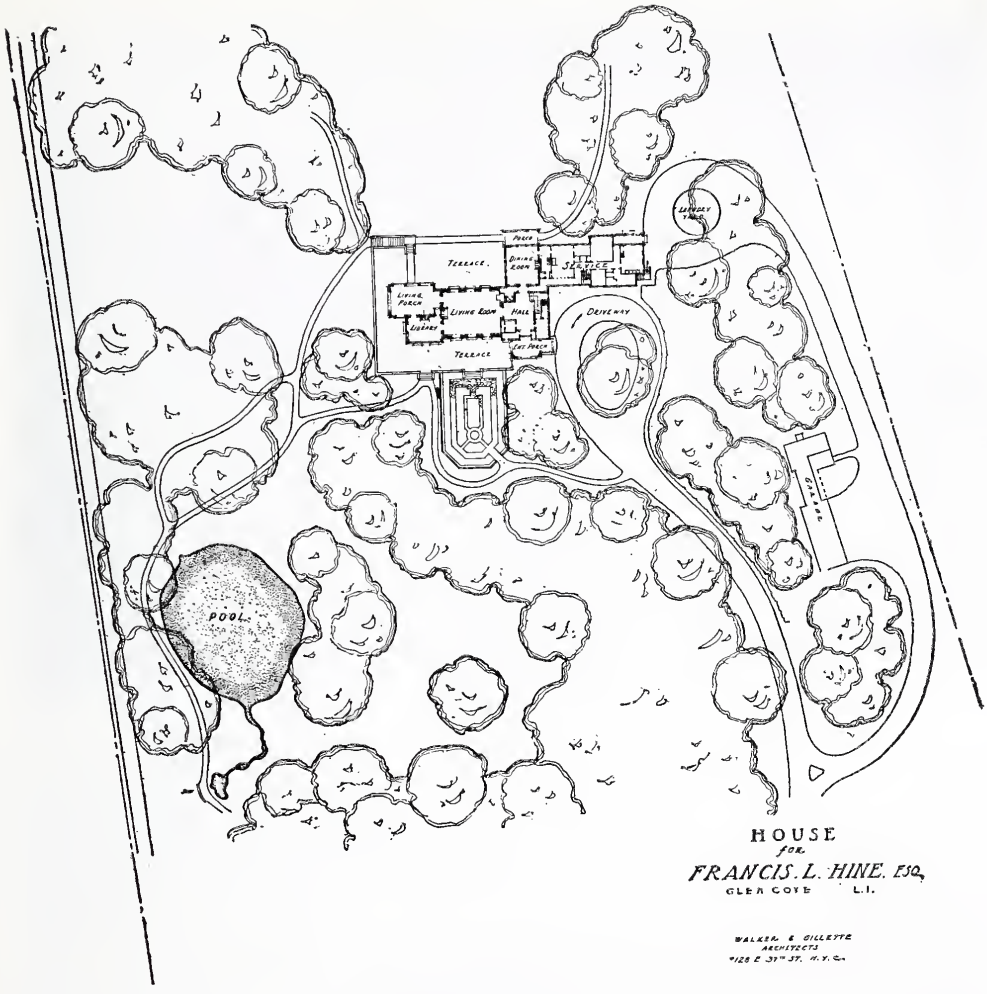
In such a country the Hine residence is located; and from a general survey, the property would seem to possess many suggestive possibilities. The immediate neighborhood is made up of the large and often elaborate country estates which abound on the north shore of Long Island. In many of these, the property lies between the highway and the Sound, with the result that the water view is towards the north—a disadvantage to be overcome at the outset. There is a gentle slope leading upward from the main road to a knoll some three quarters of the distance to the water front, and on this knoll the house is set. From here the land slopes down again to a good sized pond at the north, which is separated from the open water beyond by a strip of sand bar. The place is studded with many fine trees, singly and in groups, in the midst of which lies a sink-pool of the type so characteristic of this low-lying country, forming an interesting detail in the garden scheme.

From the accompanying plot plan, the architects' solution will be readily seen. A group of farm buildings, ranged to the east of the entrance drive, is served by a special roadway; and the roomy garage, with its doors opening away from the house, is reached by a branch of the main driveway. The long entrance road skirts the south grounds of the house on their east and swings into the entrance court from that side. The house has been placed on the summit of the knoll, as beforementioned, and has been drawn out to considerable length on its major axis, running east and west. The south elevation of the house is the garden front, the knoll being built out here to the necessary distance and level to receive the gardens. To the north of the house well kept lawns lead down to the pond at their foot. Here is the bathing beach, for which the sand bar, forming the far side of the pond, serves as a natural breakwater from the open sweep of the Sound.

The harmony created between the house and its surroundings is a decided accomplishment, to which its architectural genealogy, deriving as it does from New England rather than from the south, is largely contributory. The usual balance between vertical and horizontal has been freely and instinctively adapted so that, while the horizontal is predominant in the line and mass of the building, for the necessary verticals dependence has been referred to the many tall trees on all sides. In general, the effect of the exterior has been gained by mass and spotting rather than through an elaboration of detail, pleasant texture and judicious planting being relied upon for close-up interest. The brick exterior has been painted white, with the result of a softened wall coloring and a neutralization of any harsh contrast of materials.

The entrance court is bounded, on the north, by the long service wing and, on the west, by the end wall of the main house. Here the task has been to keep the entrance dependencies sufficiently separated from the gardens to insure absolute privacy to the latter, heavy planting being relied upon to accomplish this purpose. The entrance court serves well its utilitarian object without suggesting too forcibly the charm and attractiveness which await the bidden guest within. The entrance porch and hall occupy the south-east corner of the main house.

The kitchen wing is happily tied into the general mass by the dark line of slate roof that breaks the end wall and



GROUND PLAN—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



ENTRANCE COURT—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.

which is caught up and held by the roofs of the entrance porch. The combination of the brick and wood in this entrance porch is well studied; the problem of an all-white composition presenting itself in a very different guise from that of one in contrasting tones. The idea of informality is induced by the placing of the entrance in its somewhat casual position as well as by a certain studied *gaucherie* in its composition with its suggestion of garden architecture.

In the south, or garden, front a clever recourse has been made to the recessing of the central motif with its symmetrically spaced windows giving from the large living room. Here the deep shadow of the eave and angle binds together this portion of the façade. The three grouped windows of the library form a strong yet simple end motif which lends variety to the whole in keeping with the garden character, the arch in the centre of this group recalling the fan of the entrance porch, which it serves to balance. The dormers may be a trifle too aspiring and delicate, although they count as very minor details in giving a sparkle to the broad expanse of graduated slate roof.

When we see this façade in conjunction with the garden we feel ourselves at once in the presence of a balanced whole. The level terrace seems an outdoor extension of the living room floor and, when the generous windows are opened, must form an enticing spot for gatherings of a social nature, the idea of the garden as merely an outdoor part of the house plan being strongly sensed. The garden proper is at a slightly lower level so that it may be glimpsed with ease. The tumbling profusion of planting contributes to the desired informality and is held in check here and there by the low clipped borders; while the tiny fountain takes its place without striving and seems made for the flickering light and shade thrown by the summer sun through the tall trees to the west. This whole side of the house has been made for the sun, with what its magic can do to create living shadows on smooth expanse of wall and sward. No porches or awnings protect from its light, no balconcies project



MAIN ENTRANCE—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



DETAIL OF ENTRANCE PORCH—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



ENTRANCE PORCH FROM GARDEN—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



LIVING PORCH—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.



ENTRANCE PORCH FROM GARDEN—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.



GARDEN FRONT—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



NORTH FRONT—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.

to produce their steady geometrical shadows; with the exception of the great unifying shadow of the heavy eave in the center, all the shade is living, moving and elusive, thrown by vines and trees blown in the breeze.

The west end of the house is given over to the library and the roomy outdoor living porch with its views west over the country and north to the Sound.

The north front, apart from the subordinate kitchen wing, resolves itself into a series of three symmetrical compositions, of which the tall portico dominates. This elevation lacks the warmth of the garden front, but possesses a dignity in keeping with its position overlooking the open Sound. The fenestration of the central portion is similar to that of the garden elevation and echoes its three tall windows of the living room; while the dark iron balconies, so artfully designed and placed, provide the sharp contrast of black and white furnished to the south front by the sun-cast shadows which on the north are lacking.

The plan of the main house shows a simple and straightforward answer to the demands of a bifacial arrangement. By lengthening the building towards the west a maximum of southern exposure is obtained for the living room and library, and a western exposure for the living porch and long side of the dining room. The desirability of these exposures has had to meet the competition of the sea view to the north, and we find the happy compromise of many windows in this direction. The porch from the entrance court opens into the hall, which runs north and south along the end of the main house and is equipped with coat rooms and dependencies conveniently arranged. To the north of this hallway lies the dining room with direct access to the service wing; and to the west extends the great living room, beyond which are the library and the living porch.

This entrance hall is particularly charming; its wood paneled walls being detailed with a naive freedom and a beautiful disregard of T-square regularity. A glance at the photograph of the departure of the stairs shows in the treatment of



PORTICO ON NORTH FRONT—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



ENTRANCE HALL—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



MAIN STAIRWAY—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



DINING ROOM—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



DINING ROOM MANTELPIECE—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.



DINING ROOM DETAIL—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I.
Walker & Gillette, Architects.



LIVING ROOM FIREPLACE—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.



LIVING ROOM—COUNTRY HOUSE OF FRANCIS L. HINE, ESQ., GLEN COVE, L. I. WALKER & GILLETTE, ARCHITECTS.

the variously shaped wall spaces a remarkable freedom which is planned unstudied. This little glimpse is one of the most charming bits in the house.

The dining room possesses more conventionality, with a consistent formality and a judiciously restrained elaboration. The finish of the woodwork is very soft and is particularly successful where carving occurs. The mantel has all the decorative value of its eighteenth century English prototype, and the little niche-like china cupboards are beautifully designed with just enough savor of originality. The bits of old Lowestoft, of Staffordshire and of Derby afford for this side of the room delightful color accents, which are enhanced by the flanking pressed glass sconces.

The great living hall is a room of generous proportions, comparatively low ceiled and full of repose. Its tones are soft and low, and its three long windows on either side bring the out-of-doors very close. The details of the woodwork and paneled walls are charmingly in keeping with the general Colonial spirit and are enhanced by the very simply treated plaster ceiling. The wide fireplace focuses the attention and impresses itself by its simple boldness. The room is so wide that ample space is left before the fireplace between the flanking doorways which lead to the library and to the living porch with its pleasant terrace and overhanging balconies.

The creation of an atmosphere of quiet ease and the elimination of that sense of newness which is the fear and dread of every architect contribute to the spirit of hospitality, focusing in the living room, which, with its views north and south, plays an important part in the successful adaptation of the house to its location on an eminence with competing aspects in opposite directions. The long low mass of the exterior simulates that of an ancient house remodeled through a century or two and binds convincingly into the contour of the land, while the many chimneys bespeak as many cheerfully lighted hearths.

The whole structure shows creative imagination on the intellectual side of its production and a masterly finish in its execution, which manifests the general practitioner's broad experience as applied to a problem that taste dictates should be solved in idiomatic terms.

SEMI-MILITARY BUILDINGS IN THE NATIONAL ARMY CANTONMENTS

By Robert H. Moulton

THE War and the Navy Departments Commissions on Training Camp Activities were created at the beginning of the war to supply our young men everywhere in training with the normalities of life. Mr. Raymond B. Fosdick, chairman of these twin commissions, wished to accomplish this by creating as little new machinery as possible. Therefore, the Young Men's Christian Association, the Knights of Columbus, the Jewish Welfare Board, the American Library Association, and all such already existing organizations, were called upon to lend their cooperation. The Young Women's Christian Association came into the camps later with that unique institution, the Hostess House. This house was designed primarily to take care of women visitors to the camps and furnish a place of meeting between them and the men.

The commissions were determined to cover the whole ground in furnishing recreational and educational facilities for the soldiers and sailors. Wherever there seemed to be a gap that no existing agency was particularly prepared to fill, the commissions supplied the need direct. In this way the Liberty Theatres were furnished, meeting the problem of a place to go to and be entertained in the evenings. The Post Exchange, or soldiers' cooperative stores, were similarly started in the sixteen National Army camps, and furnish a place where the men may spend their money. Everything is on sale there, from a shoestring to a pink valentine and from an ice cream soda to a song book of the kind that the men use when they gather together by the thousands for mass singing. Club life in the camps is furnished through the Y. M. C. A., the K. of C., and, in a few camps, the Jewish Welfare buildings. Here men may read, write, loaf and smoke, listen to music and write letters home; and in the auditorium of each building entertainments of all sorts are held. Camp talent musicales, athletic stunts and imported entertainment programs all take place here, in addition to those given in the larger Y. M. C. A. auditorium in each camp and in the Liberty Theatres. The Hostess House furnishes the home life of the camp and has come to be popular with the men in the evenings during all the week. With the library to furnish him with plenty of good reading matter and a quiet place to read in, and the Post Exchange playing the role of country store or corner drug store, the men's needs are pretty thoroughly taken care of. Thirty-six library buildings have already been completed in the military camps of the country, and others are under way. These buildings are made possible through a special grant from the Carnegie Corporation of $320,000, supplemented with other funds.

The type of building chosen is new in the library world, and will be of interest to those who are concerned with camp building designing. They are wooden structures of rather plain design, similar to the usual type found in modern camps. They were designed by Edward L. Tilton of New York City, who contributed his services. Most of the buildings in the cantonments are 120 by 40 feet, while those in smaller camps are 93 by 40 feet. Special attention has been given to adequate facilities for heating, ventilation and light, and many features are now being added to make these quiet, restful buildings more attractive and inviting

than would be expected in the usual camp equipment. Some of the buildings have spacious, open fireplaces built into inviting nooks. Others have closed porches, and all are equipped with fire extinguishers, drinking fountains and running water.

The interior is a large reading room, with two bedrooms at one end for housing the library staff. Trained librarians are in charge. All of the shelves are open for inspection and contain from 10,000 to 20,000 volumes. Each building has a comfortable seating capacity for about 200 readers. In the library building is housed the main supply of books for the camp, and from it branches are maintained in the barracks, the mess halls, hospitals, Y. M. C. A. and K. of C. buildings.

Each of the sixteen National Army cantonments has been provided by the Commissions on Training Camp Activities with a Liberty Theatre building having a seating capacity of 3,000 and a stage accommodating the scenery for "Broadway" productions. The buildings are furnished with footlights, dressing rooms, and scenery for any ordinary production. There is also an orchestra pit, where regimental bands play at every performance.

Nine theatres of a smaller type have been completed in the National Guard camps and others are in course of construction. The approximate size of the larger cantonment theatres is 179 by 120 feet, with a seating capacity of from 2,500 to 3,000. The stages in these theatres are 60 by 32 feet and the floor of the house 132 by 120 feet. The National Guard camp theatres have a seating capacity of 1,000; the building being 60 by 120 feet and the stage 22 by 40 feet. The house floors are approximately 90 by 60 feet.

Each theatre has five entrances and fifteen exits and is so constructed as to be easily emptied in case of fire. Much of the work of constructing these theatres has been carried on by the many electricians, scene painters and other expert mechanicians who were discovered in the camps. Chautauqua tents are used for shows in the smaller camps, where regu-



A STANDARD ARMY Y. W. C. A. HOSTESS HOUSE.



LIVING ROOM OF Y. W. C. A. HOSTESS HOUSE, CAMP DEVENS, AYER, MASS.

lar dramatic productions, vaudeville and movies are provided by the Government for the men.

The Knights of Columbus have erected, so far, in the camps three styles of buildings. Like the Y. M. C. A., they furnish a main or auditorium building in each of the sixteen National Army cantonments. This is of squatty construction, with a front elevation in Spanish design, and is 60 by 100 feet. There is a main entrance at one end of the building and two entrances on each side, with plenty of windows to furnish light and air. Each building has an altar and a chaplain's and secretary's room in one end, and other offices in the other end. In each cantonment there are also two smaller club buildings 40 by 100 feet, with a ten-foot porch running the length of the building on one side. The interior arrangement is the same as in the main building and only differs from the latter in that there is a monitor through the middle of the building, affording the maximum of light and air. This type of building has also been erected in all of the National Guard camps.

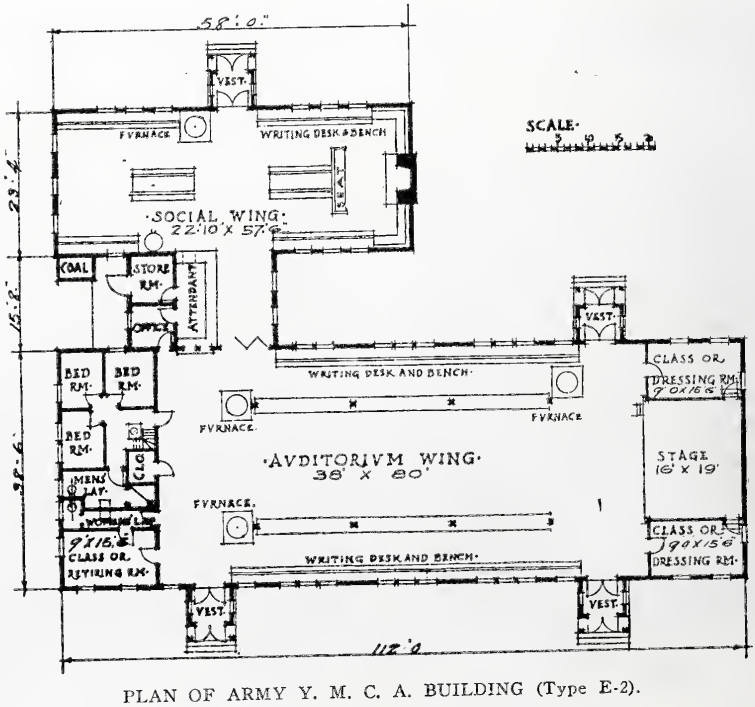
Portable buildings are also being put into use by the K. of C., of the same style and arrangement as the club buildings, with porches over the entrances on one side, and resembling a country club or bungalow. These are of special value in case of a temporary camp or of a camp being moved. Each building is equipped with room heaters, player pianos and music rolls, chairs, tables, desks, stationery, books, magazines, athletic equipment, etc. One hundred and eight of these different buildings will have been put in operation by the middle of May in army camps and marine and naval stations.

The Hostess House is a large brown, bungalow-like building set near the entrance to the camp, and stands out distinctly against the background of unpainted army buildings.

Of the $5,000,000 Y. W. C. A. war fund, $1,350,000 was appropriated as an initial fund in starting the Hostess House work. Seventy of these buildings are



A STANDARD ARMY Y. M. C. A. BUILDING, DESIGNED TO SERVE 6,000 MEN.



PLAN OF ARMY Y. M. C. A. BUILDING (Type E-2).



Y. M. C. A. AUDITORIUM AT CAMP DEVENS, AYER, MASS.



Y. M. C. A. HUT.

Each camp and training station has from four to fifteen of these buildings, and every camp of importance also has a large auditorium.



LIBERTY THEATRE, CAMP DODGE, IOWA.

already in operation. Some of the larger cantonments have two, or even three where the number of negro troops makes one seem advisable for colored women. Women architects have had entire charge of the plans for the Hostess Houses. While these houses vary somewhat in size and detail according to the local demands, in general structure and style they are similar. The utmost degree of attractiveness in keeping with camp life has been attained both inside and outside these buildings. Each one has a large chimney in the middle of the big living room, with great double fireplaces. There is a parcel checking room, a rest room for women, out of which opens a fully-equipped nursery; and the back of the building houses a cafeteria, where attractive meals are served. The buildings are electric-lighted and steam-heated, as are also the sun parlors, which usually extend across two sides of the house. The second floor of the larger buildings contains not only the bedrooms of the resident hostesses and staffs, but emergency sleeping quarters for women stranded in camp.

The Y. M. C. A. has been on the ground from the first. Before the camps were entirely completed, the Y. M. C. A. workers had their headquarters established in tents and were present with a welcome to the incoming recruits. They dispensed information and good cheer; in fact, one of them accompanied each of the incoming troop trains, going from car to car, addressing the men informally, telling them what the Y. M. C. A. stood for in camp. The Y. M. C. A. operates 178 army and navy stations at present. At the largest of these there are fourteen buildings, with a large force of secretaries and other officials.

The new standard service or so-called type "E" Y. M. C. A. building is an interesting architectural achievement. It is the last word in utility, compactness, economy of space, material and money, efficiency and adaptability to a multitude of dissimilar uses. The problem was to find buildings that would be "all things to all men" in the cantonments. The demand was for some sort of structure that would simultaneously be home, club, church, schoolhouse and entertainment

centre for the men in the ranks, a place where the whole varied army Y. M. C. A. program could be going on at one time without any phase seriously interfering with other phases of the work; where there would be facilities for the movies, the lectures, or the religious talk, and where at the same time the man who wanted to write home, buy a stamp or a money order, wrap up a package, borrow a book or a magazine, play a game of checkers or chess, enjoy a chat with his chum or a heart-to-heart talk with the secretary could do so.

The type "E" building—with its modification, the type "F" building in use in National Guard camps—is the solution of the problem. Only a visit to one of these great camp centres, however, can give an adequate idea of how admirably it fulfills its purpose. The six to eleven single-story Y. M. C. A. buildings are easily distinguishable by their dark green coat of stain from the bare and unpainted barracks that flank them. Numerous broad windows in the sides and double dormer windows in the roof flood the interior with sunshine, and doors placed at convenient intervals afford ready access. Alongside and parallel to the large wing snuggles a smaller one, connected to the larger by a broad passageway.

Once inside of the building, it is seen that the larger wing is the auditorium, the smaller the social hall. In the former are permanent benches, a stage at the far end with a piano on it and a moving picture screen. Shelf-desks for writing run all around the walls and two long hinged shelves, one in the middle of each half of the auditorium, are ingeniously fastened to the posts that support the roof and may be raised for writing or lowered when the room is to be used for any gathering.

At the end of the smaller wing farthest from the desk (which is located in the connecting passageway) a huge stone or brick fireplace lends a cheerful, homelike atmosphere. The ubiquitous shelf-desks on the walls for writing here, too, are on all sides, but the space in the centre of the long room is frequently full of comfortable chairs donated by forethoughted friends. The rocking-chairs are often the only ones to be



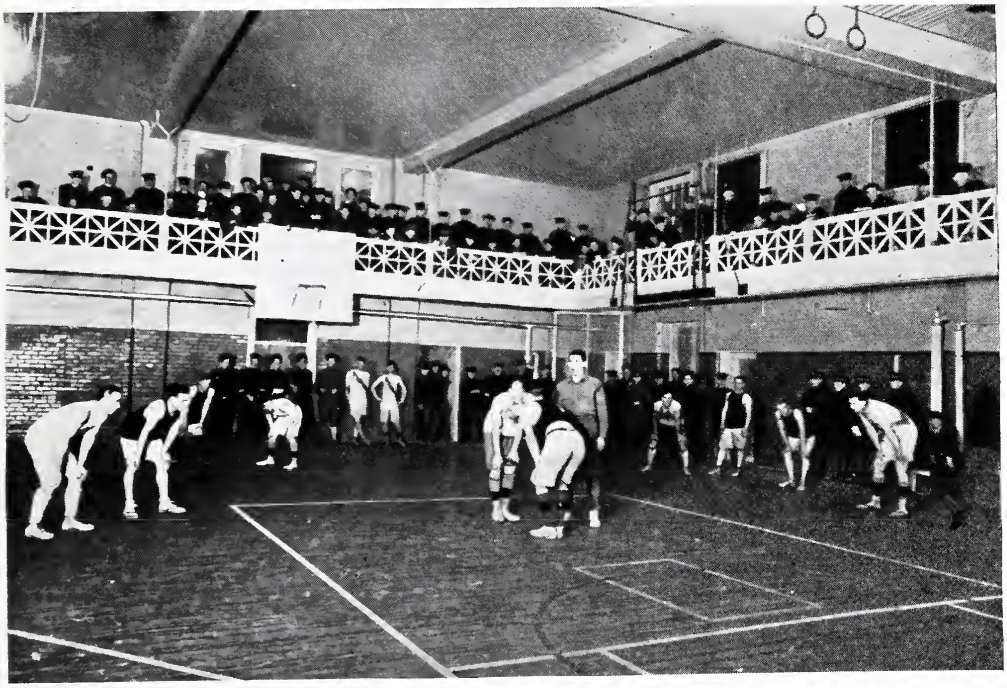
INTERIOR OF A LIBERTY THEATRE, SHOWING STAGE, CAMP TAYLOR, LOUISVILLE, KY.



EXTERIOR VIEW OF AMERICAN LIBRARY ASSOCIATION CAMP LIBRARY, CAMP LEWIS, AMERICAN LAKE, WASH.



INTERIOR OF CAMP LIBRARY AT CAMP GRANT, ROCKFORD, ILL.



A NAVY GYMNASIUM—BOTH THE WAR AND THE NAVY DEPARTMENTS COMMISSIONS TRAINING CAMP ACTIVITIES PROVIDE GYMNASIUMS.

found in camp; settees, too, and great armchairs help the soldier to forget for a time how long it has been since he said good-bye to the formerly unappreciated furniture comforts of civilian life.

The daylight hours, when the men for the most part are drilling, are a good time to find the secretaries "at home." Home to them means a small, bare bedroom at one side or other of the stage or at the opposite end of the auditorium back of and to the side of the desk. At this end, too, from amidst the secretaries' quarters, a narrow stairway leads to an upper room, the most of which is usurped by a huge movie projector booth. The space that remains on either side of this booth is delegated as sleeping quarters to two assistant secretaries. Other rooms at this end of the auditorium provide classroom, storage and office facilities.

At the big cantonments a Y. M. C. A. headquarters building is necessary, and from it the activities in all the centres in any one camp are directed. There the head camp secretary, the camp athletic director, the camp song leader, the camp religious work director, the camp educational secretary, the camp social director and the other head secretaries have their offices and rooms. Their building, too, is the acme of convenience and efficient arrangement. It is an oblong two-story structure, with the entrance slightly to the right of the middle of the longer side. This entrance leads into a diminutive lobby, where are desks, very welcome heating furnaces for the entire building, chairs, and halls leading to right and left. Numerous offices for the various camp secretaries, a larger committee room, and storerooms lined with shelves on shelves and filled with all manner of requisites for the camp work open onto the two halls. Clear across one end of the building at the extreme end of the hall is a one-story lean-to storeroom for heavier materials and supplies. This place is equipped with scales, a truck, a small block and tackle, and the like.

The second floor of the headquarters building is divided lengthwise by a hall which runs from end to end. Doors on



KNIGHTS OF COLUMBUS FIELD HEADQUARTERS, U. S. ARMY CANTONMENTS.

this open into the bedrooms of the secretaries, into a well-filled linen closet and into the bathroom. The latter is equipped with basins, shower bath and other customary fixtures. Every inch of space is skillfully made use of, and the headquarters buildings of the Y. M. C. A. in the various cantonments are interesting and convincing examples of the thoroughness with which the Association has attacked the whole problem.

In addition to the auditoriums comprising one wing of every type "E" building, a huge central auditorium is being erected in each of the large cantonments. This structure measures 131 by 106 feet and will seat 2,803 men. It will be used for staging plays, vaudeville, concerts, lectures and the large religious gatherings. On Sundays it will be open to Protestant, Catholic and Jewish chaplains in turn, and week days will find it in almost constant use. The central part is free from all supporting posts and is large enough for two basketball courts. At one end is a commodious stage. Footlight, spotlight and scenery facilities have not been overlooked. The auditorium, like the other Y. M. C. A. buildings, is heated by stoves placed on concrete foundations at frequent intervals.

The building known as type "F" is in use in some of the camps and cantonments. It is simply the "E" building with the social hall left off, and is intended for serving units of less than 2,000 men. The auditorium wing is made to serve all the many needs of the men. In this style of building the desk is placed in the middle of the end opposite the stage. Movie booth, bedrooms and storerooms are tucked away above the desk, and offices are at either side. The space under the stage in this type of building, as in all the others, furnishes storage facilities.

The total number of Y. M. C. A. buildings either in operation or under construction in the camps and cantonments of this country is somewhat in excess of four hundred. Of these about 150 are standard service buildings and approximately 125 of the "F" type. Besides these permanent buildings 130 tents are in use at various points. Headquarters buildings for each of the thirty-two National Army cantonments and National Guard camps are included in the total, as well as eighteen auditoriums for the National Army, for one embarkation camp, and one Regular Army expansion camp. A standard service building costs usually from $7,500 to $9,000.

For serving the American Expeditionary Forces in France, a modified form of "F" building is in use. It costs two to three times as much to put up such a building in France as to erect the same building in the United States. The explanation, of course, is the scarcity and high cost of materials in France, the great distance some materials have to be transported and the scarcity of cargo space. Until permanent buildings can be constructed large tents must suffice for much overseas work.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

Part VIII.

THE middle of the eighteenth century saw a distinct change in style consequent upon improved traveling facilities, and researches by Teutonic, French and British architects in Italy, Greece and further East.

Publications of designs and works on architecture were very numerous, and previous styles, especially the work of Inigo Jones and Webb, were assiduously studied, copied and analyzed by William Kent and Lord Burlington's school. Sir William Chambers published a book illustrating designs of Chinese architecture, which largely influenced the character of furniture. The issue was subsequently suppressed, and Sir William Chambers practiced a purer classical style. He was engaged among other things, upon the lay-out of Kew Gardens, where he erected the pagoda and minor temples which ornament the grounds.

Chippendale and his confreres worked on somewhat similar lines, except that their designs were influenced strongly by contemporary work in France. The wood carving of Pineau, the designs of Cauvet and the metal work of the Boulle school appealed largely to their taste, and an independent style resulted which was divorced from the fixed leading lines of previous work. They produced many ingenious examples of carved furniture, mostly in walnut, much of which was of excellent design, although a considerable proportion ceased to live after the era of its vogue.

Robert and James Adam developed a new style based largely upon their researches at Spalato, upon which they published a monograph. Placques of figures and friezes of classic subjects were embodied in most of their productions, after the manner of Josiah Wedgwood and Flaxman.

In planning, however, the Adam brothers excelled their predecessors, and of their work Sion House, Isleworth, stands out in marked contrast to other mansions of the period. The building is square on plan, having a large circular courtyard in the centre, and the approach from the main road is through a delicately designed stone screen.

The interior decorations conform to their usual style, except that the main lines and alcoves are of a rather more solid and classical character than in the smaller edifices treated and give an air of the grand manner of architecture.

There exists in the Sir John Soane Museum, London, a series of original drawings and designs by this school, bound in over fifty volumes, including furniture, candelabra and fittings with a variety of cornices, friezes and detail work of all descriptions.

In monuments, Robert Adam carried out similar principles of design and detail, of which may be mentioned the cenotaph to Elizabeth Percy (1776), Duchess of Northumberland, in Westminster Abbey, which is a fine example with good carving by N. Read.

There were many followers in the Adam manner, of whom George Richardson is one of the most conspicuous. It is possible that Richardson was responsible for the design of the decorations illustrated in this article from No. 14 Dering street, Bond street, W., a house which was pulled down in 1912. The detail is delicate and the design conforms to the usual geometrical character associated with the Adam period ceiling.

As has been previously stated, the majority of the draftsmen employed by Adam were of Italian origin, of whom M. A. Pergolesi, Cipriani and P. Columbani were the most skilful, and published works embodying designs for ceiling and chimneypiece ornament.

There are innumerable examples ex-



DETAIL OF CHIPPENDALE PERIOD MANTELPIECE IN KING CHARLES ROOM, ASTON HALL, BIRMINGHAM, 1750.

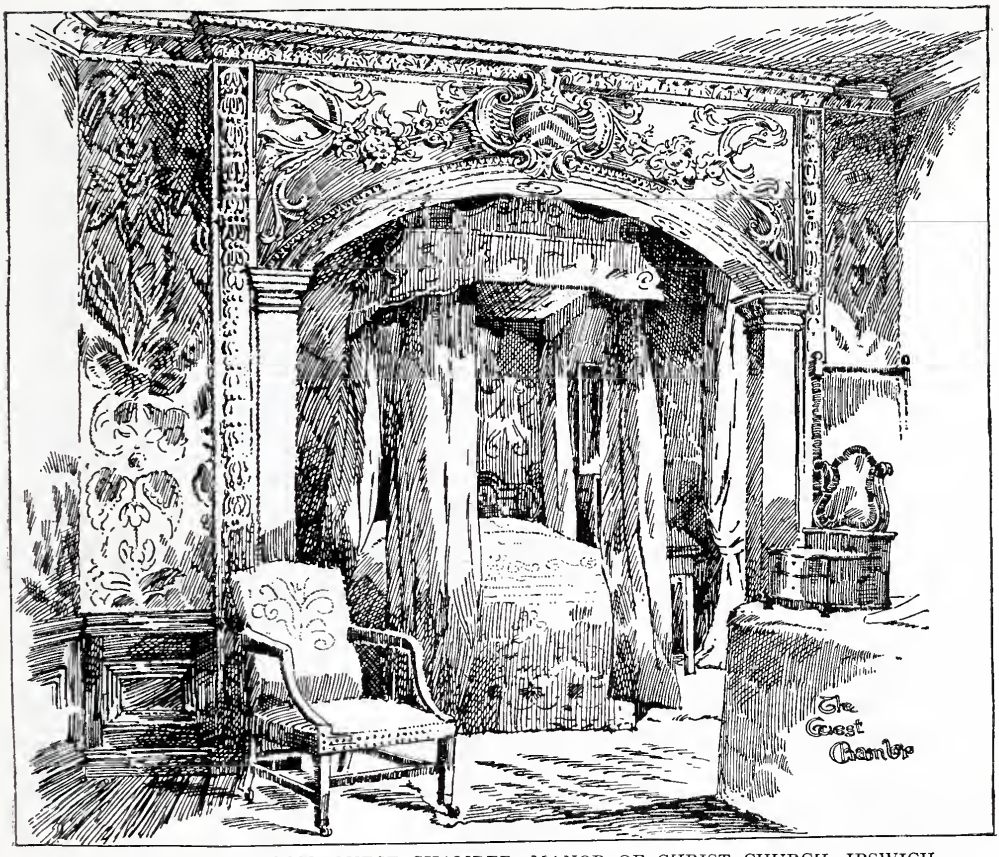
tant, in all the chief centres of England, of Adam period chimneypieces, of which illustrations are given; one being from the drawing room at Forde Abbey, another from the billiard room of The Pynes, Devon, and a third from Exeter. Marble chimneypieces with relief carving or inlay obtained to a large degree, and the work of Peter Bossi of Dublin is of considerable refinement, of which examples are preserved in the Victoria and Albert Museum, London.

The library ceiling at Belton House has already been referred to. This is slightly barrel-vaulted and contains painted panels after the manner of Angelica Kaufmann. These concave ceilings became common during this era, following the trend of geometrical design which then obtained.

The free style of the Chippendale school was introduced rather earlier than Adam work, but developed contemporaneously with it in various towns in the provinces. One often finds a house with two adjacent rooms, of which one is treated with this free rendering of ornament and the other with plaques and the lighter Adam method, an instance of which occurred in the recently demolished house in Abchurch Lane in the City of London.

Some houses in St. James's Square have good examples of Adam ceilings with painted panels in varied designs; while the clubhouses in St. James's street, Piccadilly, and many of the older houses in the Adelphi abound with rich examples of this style.

The newels and balusters of staircases were also in lighter vein than their predecessors, having in some instances as many as three balusters to a tread, the strings being cut and not continuous, as was the previous practice. At Saltram, Devon, there is a fine staircase of this character. This house is the residence of the Earl of Morley and contains some Grinling Gibbons period carving. A few of the later rooms are by the Adam brothers, with ceiling panels painted by Antonio Zucchi. Here again we see the combined effect of the free rendering ornament in ceilings and



ALCOVE IN ANTEROOM, GUEST CHAMBER, MANOR OF CHRIST CHURCH, IPSWICH.
Drawing by C. C. Cheek.

decorations in juxtaposition with the more pronounced Adam work.

Goodwood House is rather earlier than the last mentioned, being an example of the work of James Wyatt. Herein are some fine eighteenth century canopied bedsteads and Chippendale mirrors.

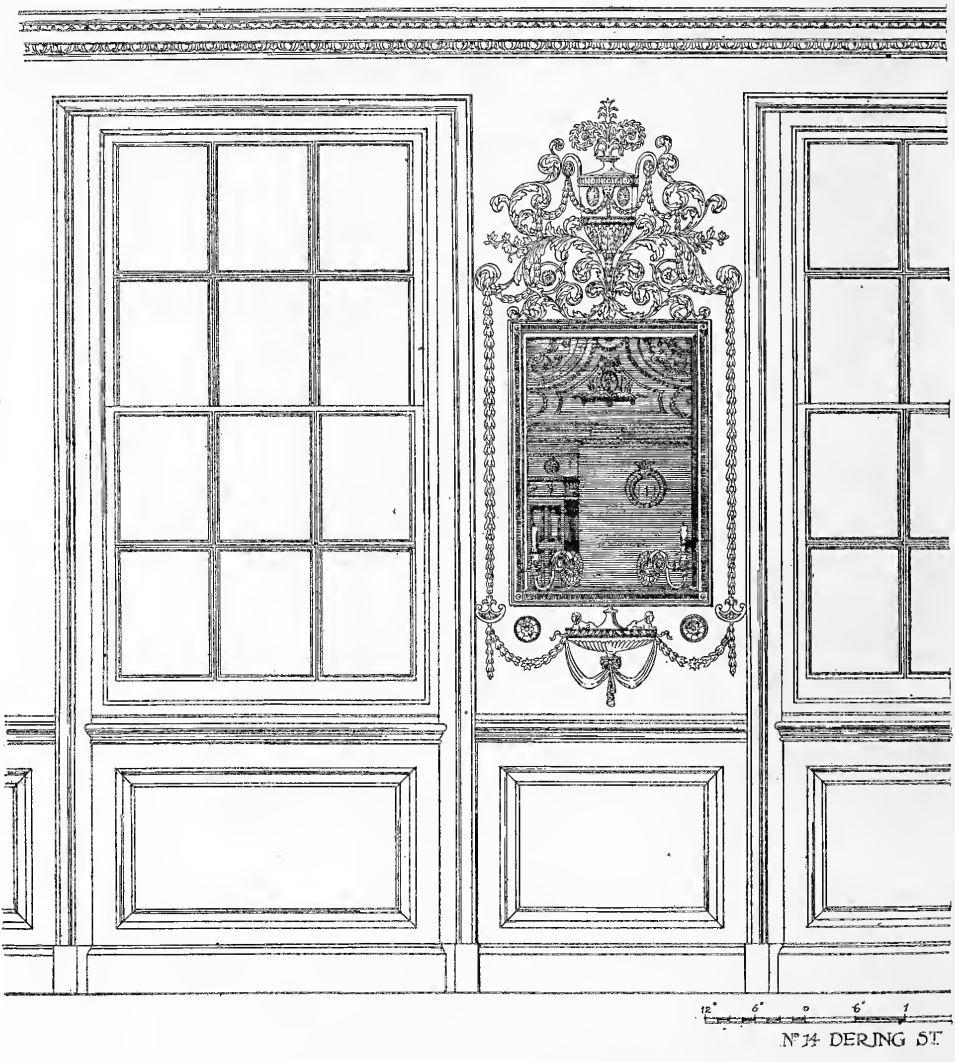
The most direct piracy of French Renaissance is to be seen at Castle Howard, one of the massive and palatial edifices designed by Sir John Vanburgh, the architect of Blenheim Palace and of additions to Grimsthorpe. One of the great mantelpieces at Castle Howard has a very strong resemblance to one of the chimneypieces at the Palace of Versailles. The work of this architect undoubtedly influenced much of the work of his age, judging from the reflected imitations which are frequently encountered in smaller houses.

There is a more modern instance in England, where a French architect was directly employed at Waddesdon Manor, Bucks, by the late Baron Ferdinand de Rothschild. M. D'etailleur has here developed a grand Louis XV chateau in all the splendor of form and detail, both within and externally, in a manner at once complete and imposing.

Bowood, Wiltshire, the seat of Lord Lansdowne, is another example of the work of the brothers Adam, of which the dining room decorations are in the most representative character of the period.

There are not many buildings now standing of the work of James Paine; but he was directly associated with Robert and James Adams at Kedleston Hall, Derby, the residence of Lord Scarsdale, where the rooms are of considerable interest.

The hand of James Gibbs is evi-

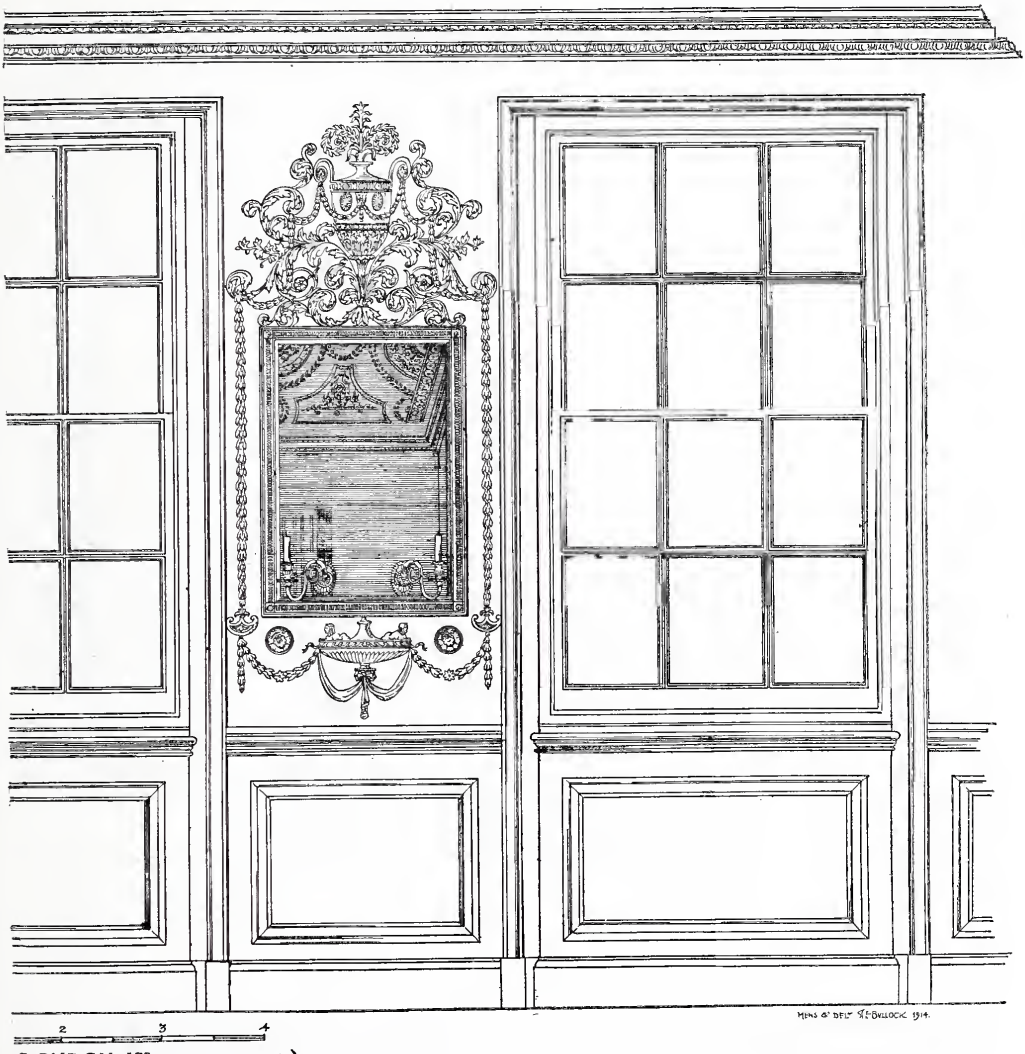


WEST SIDE

denced in the decorations at Ragley Hall. The plaster ornament is of the free rendering associated with the period. The effect of the great hall with its vaulted ceiling is similar to that obtained in the Church of St. Martin's-le-Grand at Trafalgar Square, designed and erected by James Gibbs. He was also the architect of the Radcliffe Library, Oxford, built in 1747, where he employed William Townsend and William Smith as masons, John Philipps as joiner, Artari as plasterer, and Michael Rysbrack as sculptor, who carved the bust of the founder, John Radcliffe, M.D. (obit. 1714), in marble.

Artari and Rysbrack had previously been employed by William Kent at Houghton, where the Stone Hall represents the work of Artari and the figures over the pediments to the doors the work of Rysbrack. The plans of this edifice were published in 1755 by Ripley, Kent and Ware.

There are many isolated examples of Chippendale or middle sixteenth century



LONDON. W. (DEMOLISHED 1914)

OF ROOM.

chimneypieces, door architraves, etc., of which two typical instances may be cited:

At Aston Hall, Birmingham, in King Charles I room there is a fine frieze, unfortunately damaged by souvenir hunters, of which I append a sketch; while there exists in Dr. Johnson's room a unique mirror which rather savors of Grinling Gibbons' influence in the design. This will be illustrated later. In Lady Holt's room is a curiously designed door casing, probably of the early Victorian era, of unusual detail, which gives some idea of the character of the work developed during the confusing period of the rival schools of Gothic and Classic revival.

The second example occurs in the library chimneypiece at the Friends' School at Ackworth, near Pontefract, where, it will be seen, the carving is of the same freedom of design and execution as that at Aston Hall.

The cornices at this time were usually modillioned, but varied in degree, of

which some examples are here shown, together with the side of an Adam period room from a house near Manchester in a drawing by Mr. Thomas of that town.

Clayton House, Bucks, is very rich in both Chippendale and Adam period detail. The walls of the hall are treated in the Adam manner; the balustrading is in wrought ironwork, and the stairs, treads and risers are inlaid with parquetry and mother-of-pearl insets.

The apartments of Lord Fisher at Greenwich Hospital contain a dining room of paneled oak, with a ceiling modeled in a manner rather different from those above described, there being festoons of a more floral character embodied in the design.



PORTION OF GIBBS PERIOD CEILING, VICTORIA AND ALBERT MUSEUM.

Color formed an important item in the treatment of Adam period decorations: black and gold caryatides; blue and green birch chairs; amboyna inlays to harpsichords and organ cases; ebony, gilt and mahogany doors; and, in special instances, varied colors to modeled friezes in imitation of ivory, with fruit and flowers forming the ornamental festoons—these are a few of the many variations adopted to obtain striking effect.

Mr. Goodison discovered traces of apple-green to the general groundwork of a certain ceiling, which appears to have been followed at Dering street, and there is little doubt that the practice of tinting plaster work became common at the time.

An excellently illustrated book on the Life and Works of the Brothers Adam was recently published by Mr. John Swarbrick, of Manchester, in which he gives many examples of the most authentic work of the Adelphi School.

Every known art and device appears to have been practised to obtain good effect and originality in their designs, including ornament in pewter and applied brass and gilt lead to the wrought iron framings of overdoors.

Door furniture was of a delicate nature and very ornamental. The joiners of the period vied with each other in the production of a variety of different types of chairs, mirrors, settees and other furniture.

Sheraton, Shearer and Heppelwhite were some of the more notable master joiners of the age, who usually worked in mahogany and birch, whereas walnut was the chief medium during the middle half of the century. Cuban mahogany was first extensively used in paneling by Kent at Houghton. Chippendale's masterpieces were frequently in walnut. The carved chair backs and armchairs with cabriole legs were usually made with lift-out seats. Rosewood was not used much at this time, becoming common during the early years of Queen Victoria.

Mr. Bennett recently discovered a fine frieze of the Adam period, of which a sketch will be given later. The original is colored in enamels of varied hues, and in design is very graceful.

Painted and stenciled decorations are occasionally found, of which an example exists at Sheen House, Richmond, near London, some portions of which appear to be handpainted. The Greek motifs were freely used in the designs of this age, including various forms of fret pattern and the honeysuckle and acanthus leaf ornaments with festoons of husking and wreaths of laurel leaves or budded almond.

The distinctive differences between the

two types previously described lie in the geometrical formation and straight moldings of the Adam work as compared with the free flowing floral and conventionally leafed curved moldings of the period associated with the time of Chippendale and Gibbs.

There existed until recently a ceiling, at Westminster, having crossed beams with a Greek fret ornament and modeled centres to the panels, containing ovals with the heads of political characters of the age in semi-relief. The house is said to have been occupied by Lord North as a town residence, his bust composing one of the features of the ceiling.

There was much good detail executed in the many entrance doors, of which London is the happy possessor of many fine examples, although a number have been demolished in recent years. I hope later to illustrate a few typical instances; but give here a detail showing features of an Adam period example carved in pinewood in a very skilful manner, which formerly existed in Great George street, Westminster, and is now housed in the fine collection of woodwork at South Kensington. The door-case formed part of a portico, some columns of which have also been preserved.

During the later half of the eighteenth century the demand for decorations was very extensive both in England and France until the time of the French Revolution, when sterner events produced different methods and the character of the work of Percier and Fontaine of Paris was in strong contrast to that of the previous age.

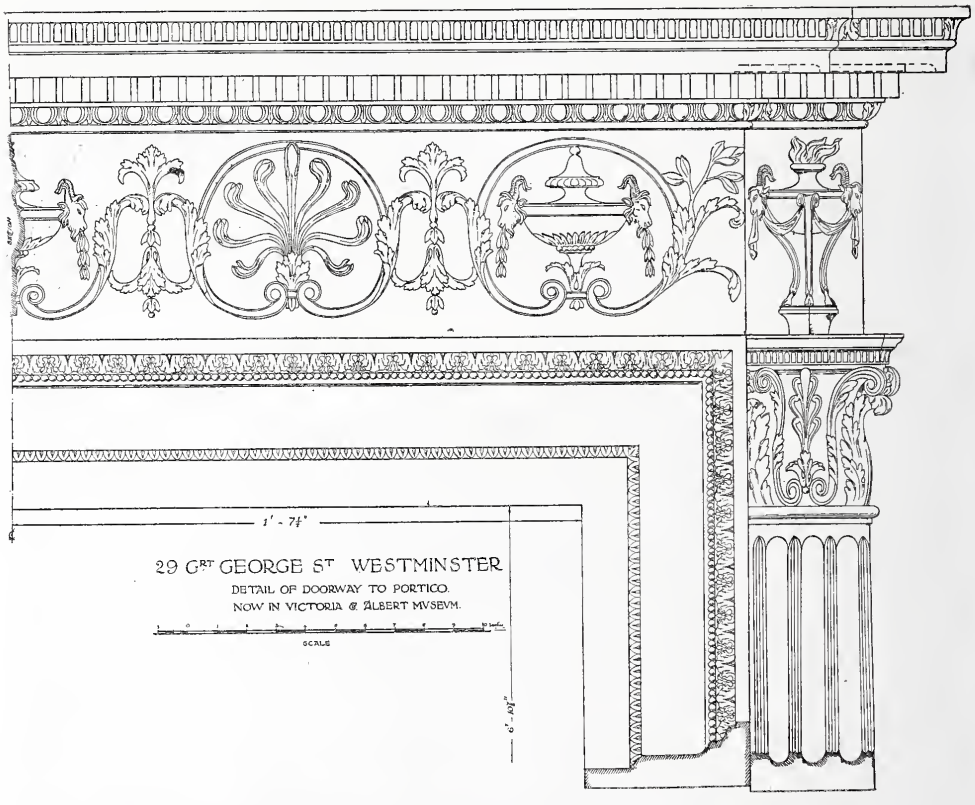
In England the death of Robert Adam in 1792 brought about the decline of his style, and the classical revival succeeded during the closing years of George IV. The prime movers of this new introduction were Sir Robert Taylor and Sir John Soane, whose lectures at the Royal Academy conduced to influence the work of the rising generation. Prior to the event of the Victorian era a Gothic revival occurred, and the rivalry between the two schools of thought and design was for a time very acute.

Sir Charles Barry and Sir Gilbert Scott were the principal architects of the age, but Barry's classic work in his club-houses was more successful than were his Gothic churches. The Houses of Parliament is the most original production of the time, in which the detail was for the most part designed by his assistant, Pugin.

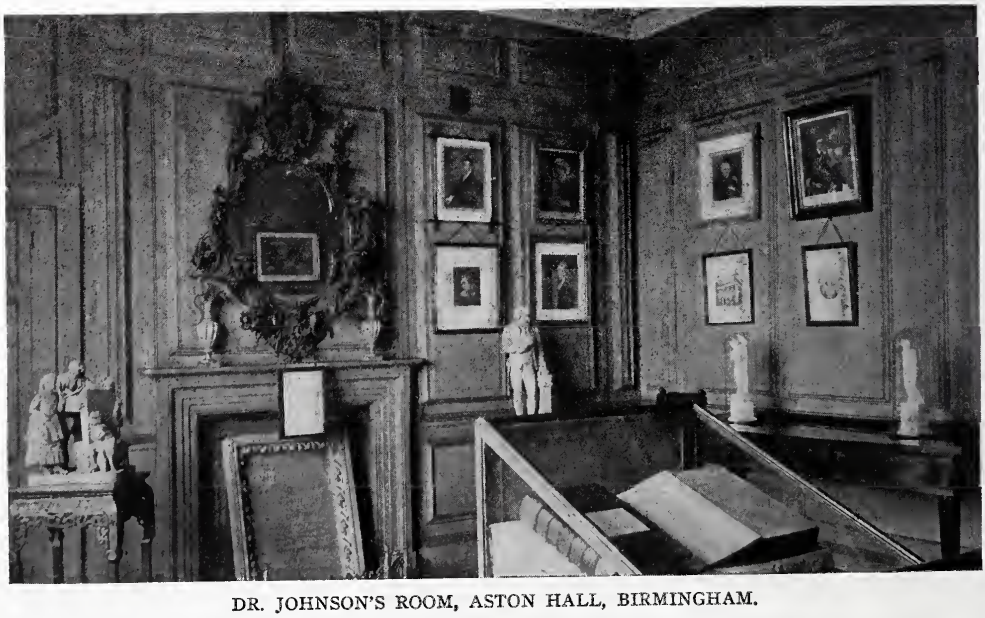
Some examples of these periods, as far as relates to interior decoration, will probably be given in a future issue, after the intermediate Georgian styles have been more fully described.



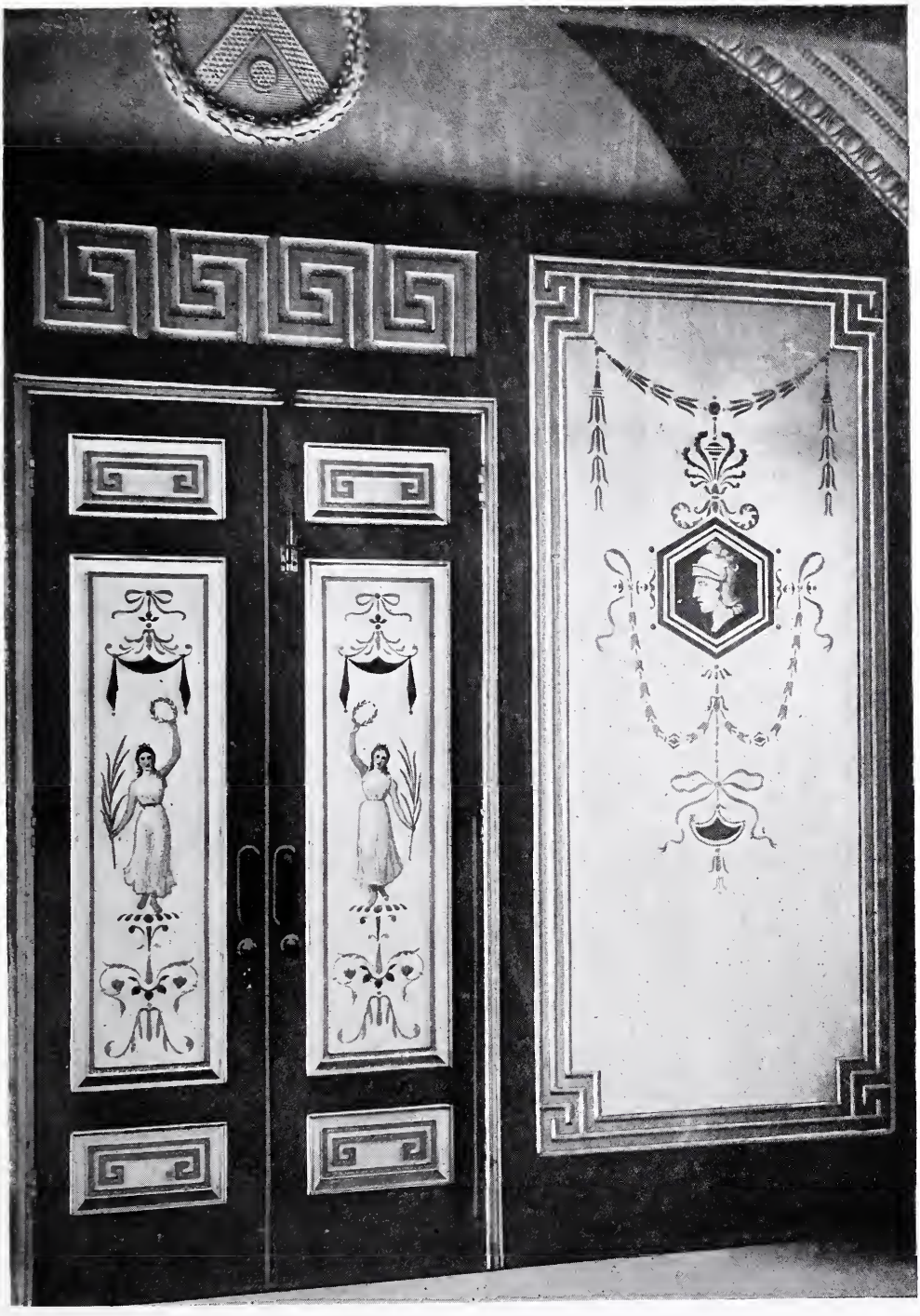
PORTION OF GIBBS CEILING IN VICTORIA AND ALBERT MUSEUM.



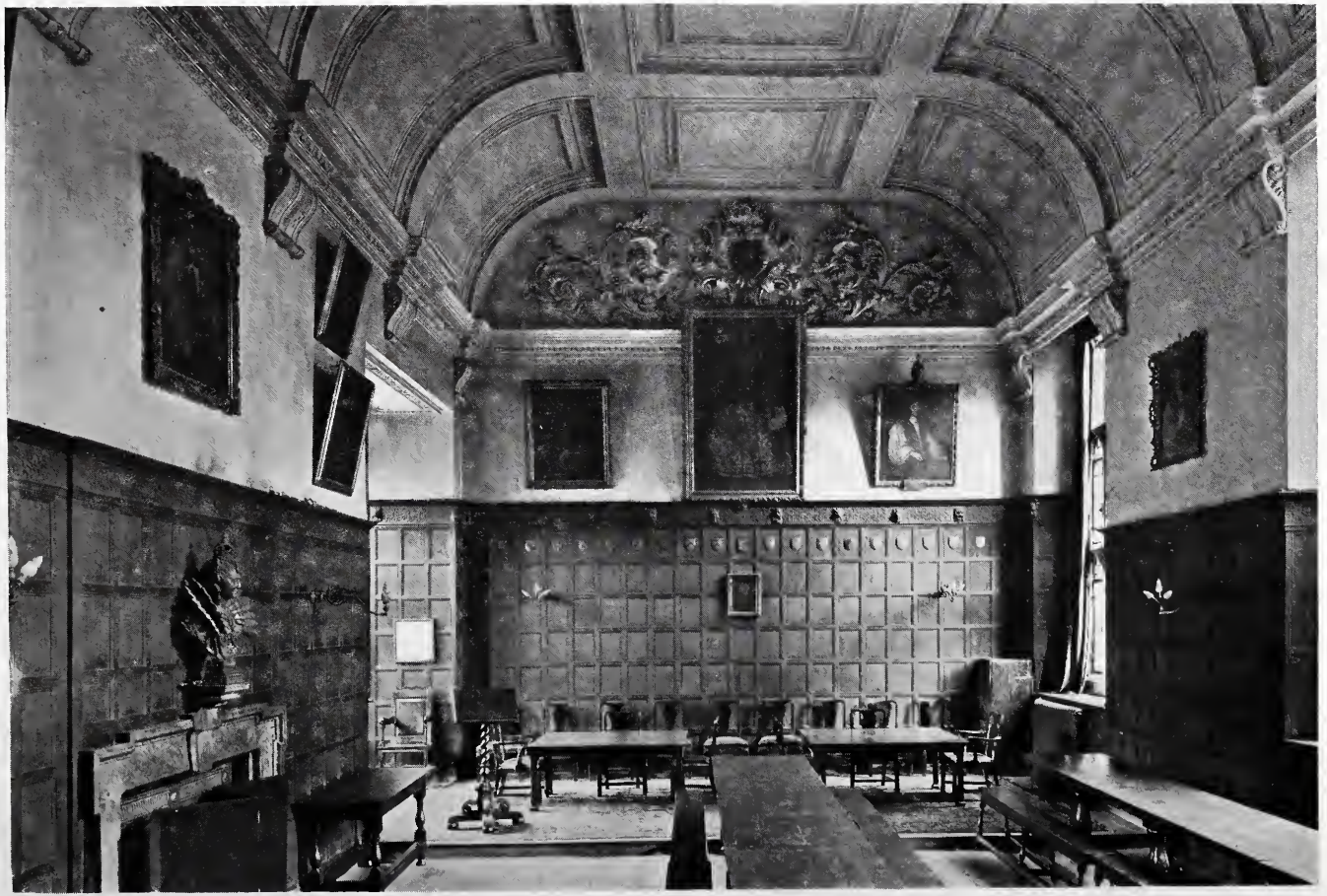
DETAIL OF ADAM PERIOD OVERDOOR, VICTORIA AND ALBERT MUSEUM.



DR. JOHNSON'S ROOM, ASTON HALL, BIRMINGHAM.



STENCIL DECORATION, SHEEN HOUSE, RICHMOND, 1785.



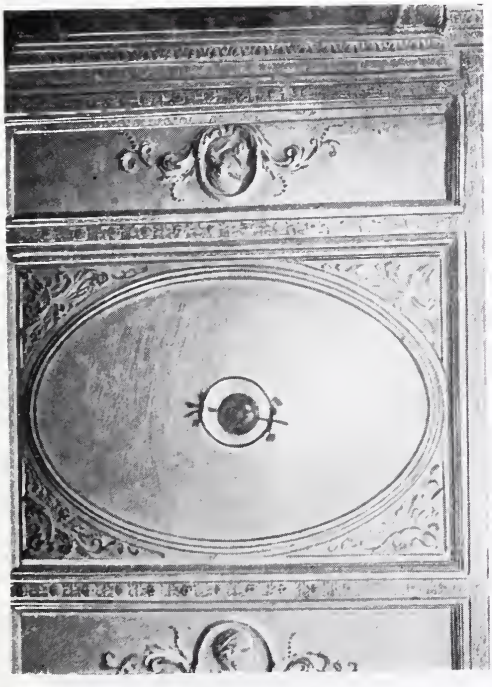
DINING HALL, JESUS COLLEGE, OXFORD.



DETAIL OF SIDE CEILING AT WESTMINISTER, 1760.



DETAIL OF ANGLE CEILING AT WESTMINISTER, 1760.



DETAIL OF CENTRE PANEL, CEILING AT WESTMINISTER.



ADAM PERIOD OVERDOOR, NO. 10 CATHERINE COURT, E. C.



LEAF ORNAMENT, ADAM PERIOD CEILING,
14 DERING STREET, W., 1771.



END OF SEMICIRCLE, ADAM PERIOD CEILING,
14 DERING STREET, W., 1771.



DOOR CASING IN LADY HOLT'S BEDROOM, ASTON HALL, BIRMINGHAM, 1820.



DINING ROOM CEILING, LORD FISHER'S APARTMENT, GREENWICH HOSPITAL, 1750.



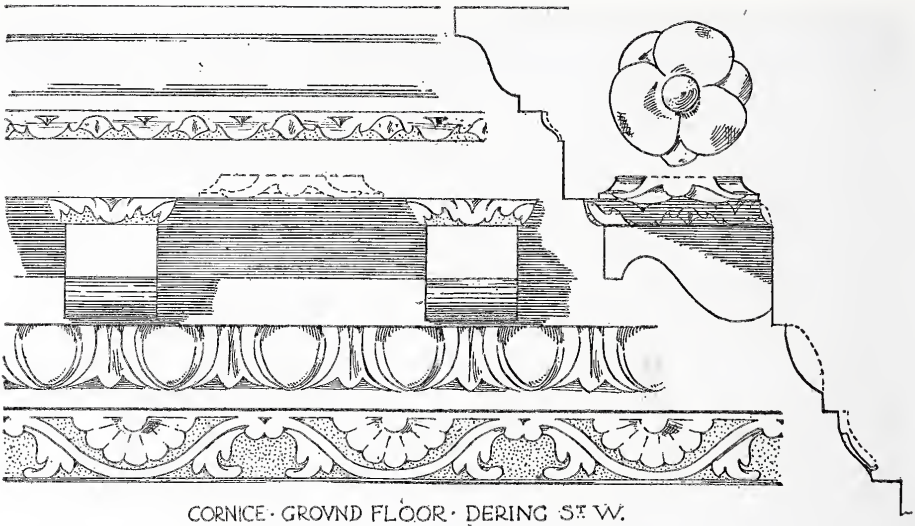
DETAIL OF DINING ROOM CEILING, LORD FISHER'S APARTMENT, GREENWICH HOSPITAL, 1750.



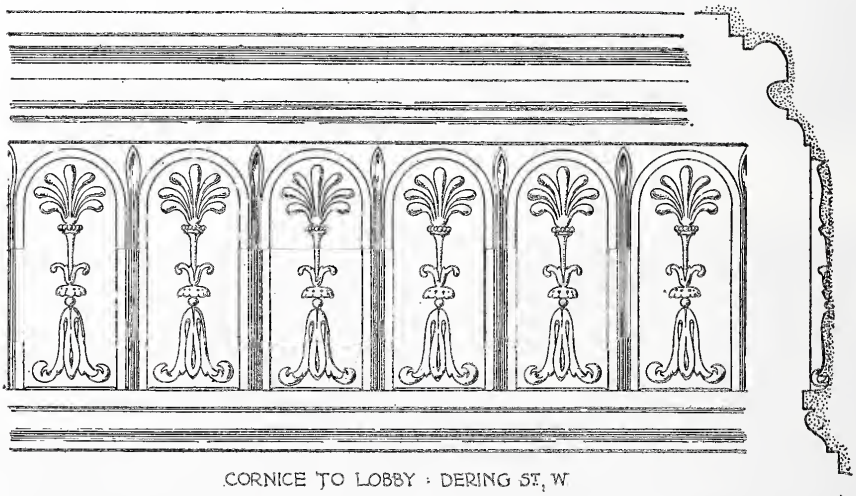
STUDY IN LORD FISHER'S APARTMENT, GREENWICH, HOSPITAL, 1750.



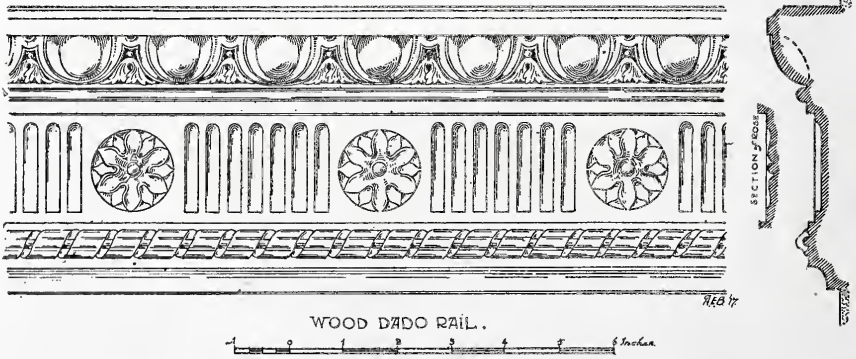
ADAM PERIOD CHIMNEYPIECE IN BILLIARD ROOM. THE PYNES, DEVON.



CORNICE · GROVND FLOOR · DERING ST. W.

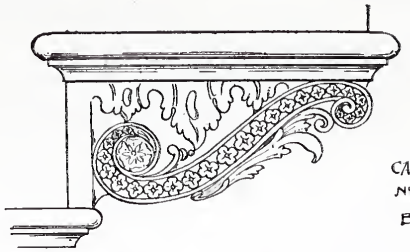


CORNICE TO LOBBY · DERING ST, W

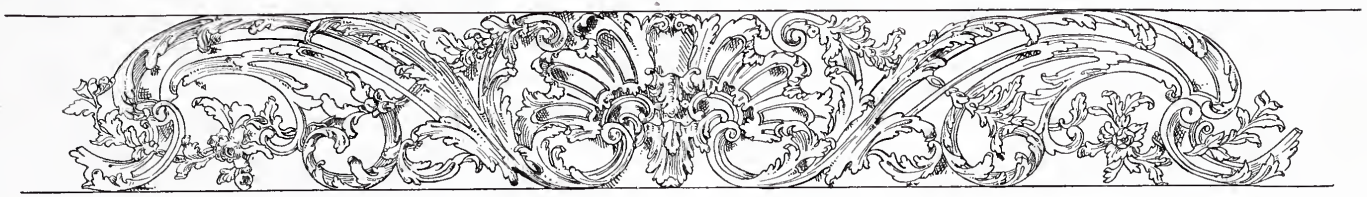


WOOD DADO RAIL.

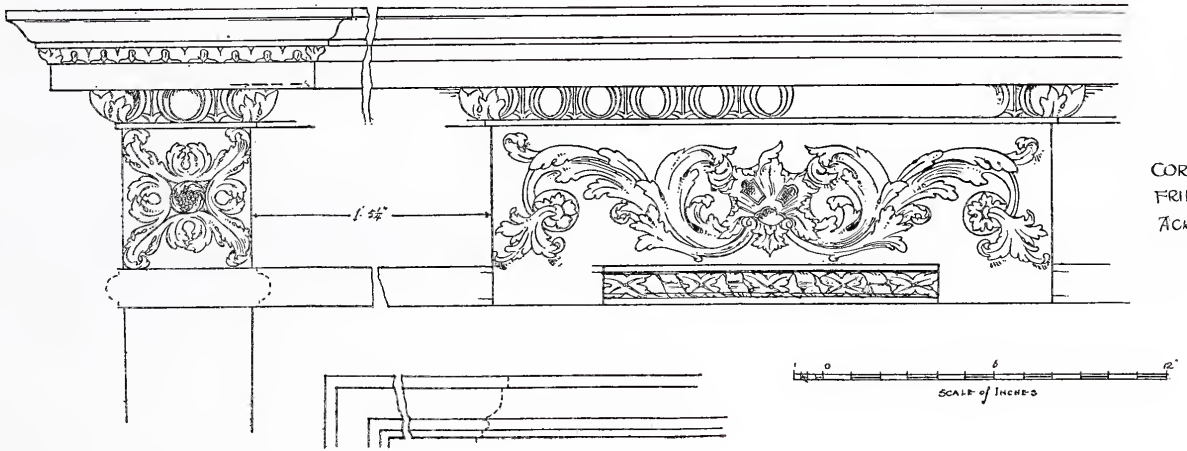
DETAILS OF CORNICES &c ADAM PERIOD.



CARVED STAIR END
Nº 5 JOHN STREET
BEDFORD ROW: LONDON.

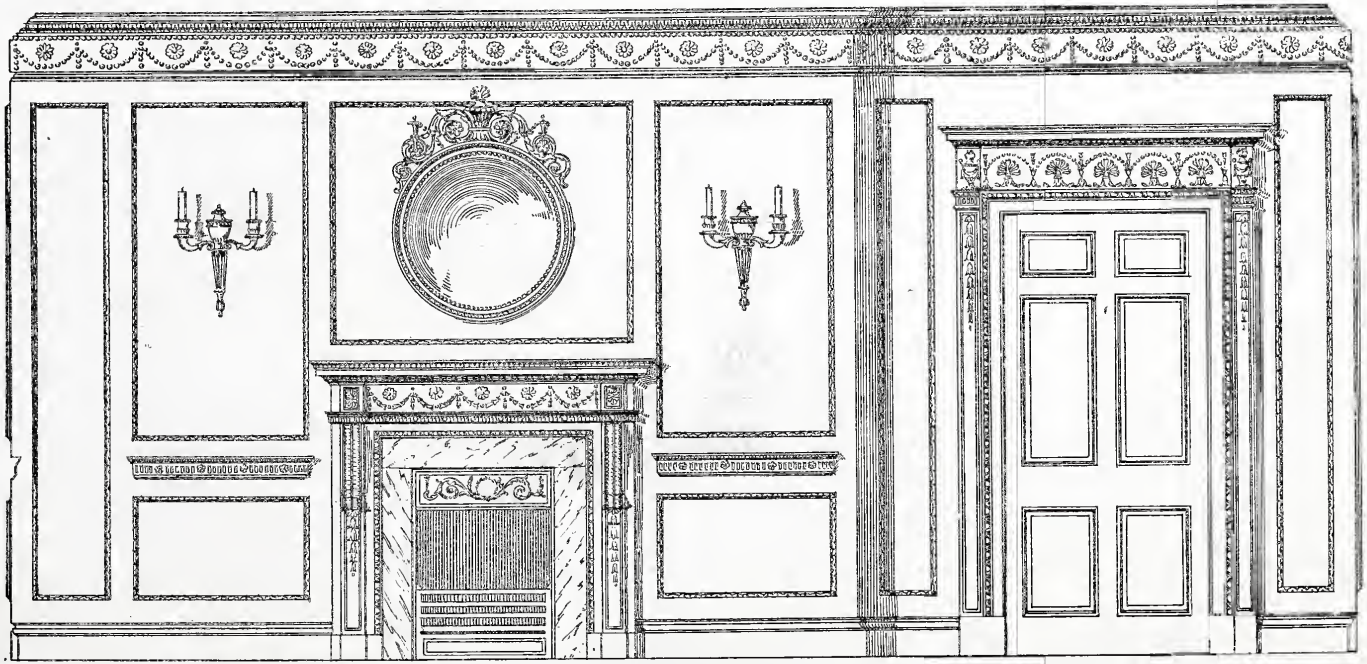


FRIEZE TO CHIMNEY PIECE ASTON HALL BIRMINGHAM.



CORNICE & FRIEZE TO CHIMNEY-PIECE
FRIENDS SCHOOL LIBRARY AT.
ACKWORTH Nr PONTEFRACT YORKS

A.B. Bullock delt 1917



SCALE OF FEET

ONE SIDE OF ADAM PERIOD ROOM.

FROM A DRAWING MADE BEFORE
DEMOLITION BY Mr THOMAS
OF MANCHETER ABOVT 1870.

PELT AE BVLLOCK ARIBA
DIS

INDVSTRIAL HOVSING DEVELOPMENTS IN AMERICA

By LAWRENCE VEILLER
Secretary of the National Housing Association

PART V TRIUMPHING OVER THE GRIDIRON PLAN A DEVELOPEMENT at ELIZABETH, N.J.

By Murphy & Dana, Architects

TELL the average real estate man that he can get more houses on his property and secure a more advantageous development by giving away some of his land instead of attempting to use all of it, cutting it up into lots in the usual way, and he will scoff at you as a theorist and a dreamer.

The average architect confronted with the usual gridiron plan and a deep lot, as a rule stands helpless and can suggest nothing in the way of development other than tall tenements of barrack-like appearance, or continuous rows of small houses of the Philadelphia style, occupying the entire frontage of the property, with large back yards. Lamenting, as he works out such a plan, the straight-jacket of the gridiron street system, and commenting on the unfortunate handicap of the deep lot and his inability to do anything with that kind of property, he sighs for large acreage tracts to develop, saying if he only had 50 acres it would be possible for him to make a Garden Village development of a satisfactory type.

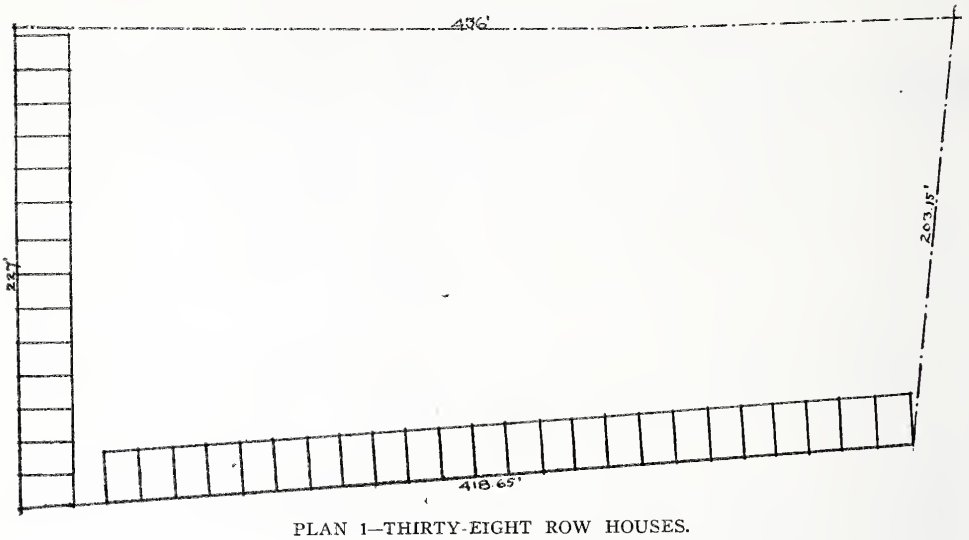
It is thus that the conventionally-minded man deals with this kind of a problem. When one comes to think of it, it *is* strange, is it not, that it should so seldom occur to him that he can disregard existing property divisions and lot layouts, scrap all these and treat the property as a single piece of land, laying it out anew in such manner as will give the most satisfactory results.

A striking illustration of the possibilities of an ordinary city block, even as small as 200x400 feet, in the heart of a well established city, is to be found in the housing development at Elizabeth, New Jersey, now nearing completion for Mr. Archibald H. Bull, of which the architects are the firm of Murphy & Dana, of New York.

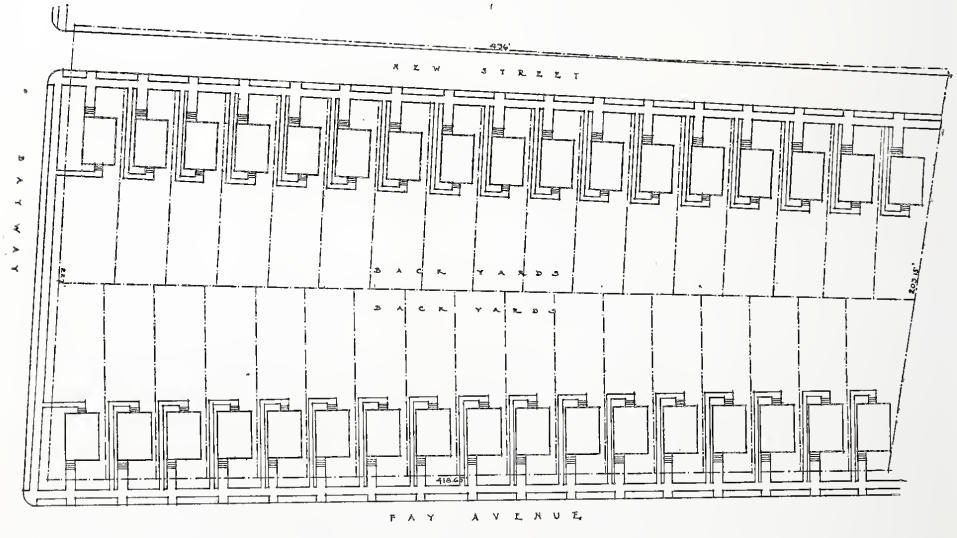
In this case the architects were confronted with the problem of utilizing a piece of property of rectangular form but irregular shape, approximately 227 feet by 418 feet on the two sides abutting on the street, the irregular sides being respectively 203 by 436 feet. The usual method of laying out this property would have been, as shown in Plan 1 on page 50, with continuous rows of small houses on the two street frontages, setting back the houses a reasonable distance from the street and leaving large back yards at the rear of each. Under such a plan, utilizing small houses of the Philadelphia type, with a 16-foot frontage and a 23-foot depth, built in continuous rows, it would have been possible to have obtained but 38 houses on this property.

If, instead of building houses in continuous rows, detached houses were desired, and only the very inadequate space of 7½ feet was left between the houses, it would be possible to obtain only 26 houses instead of 38 (see Plan 2).

When the idea, however, of giving



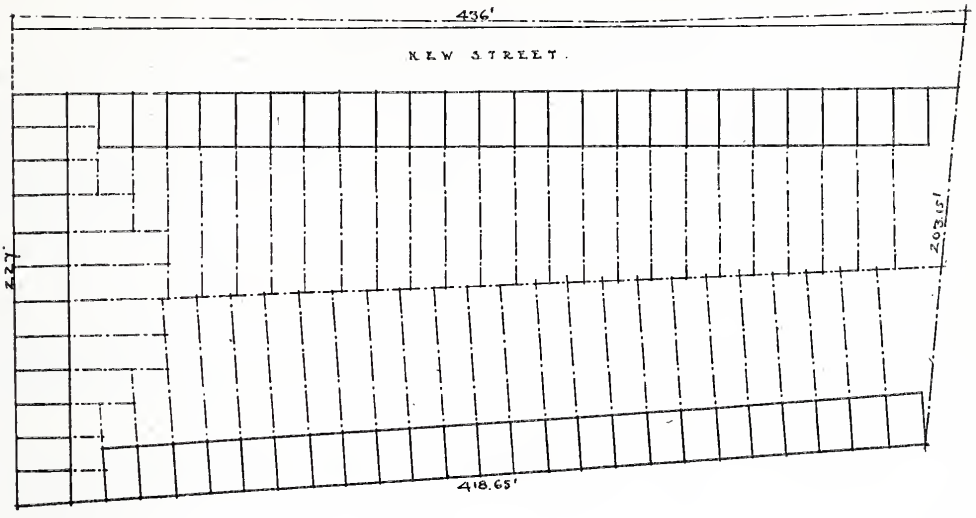
PLAN 1—THIRTY-EIGHT ROW HOUSES.



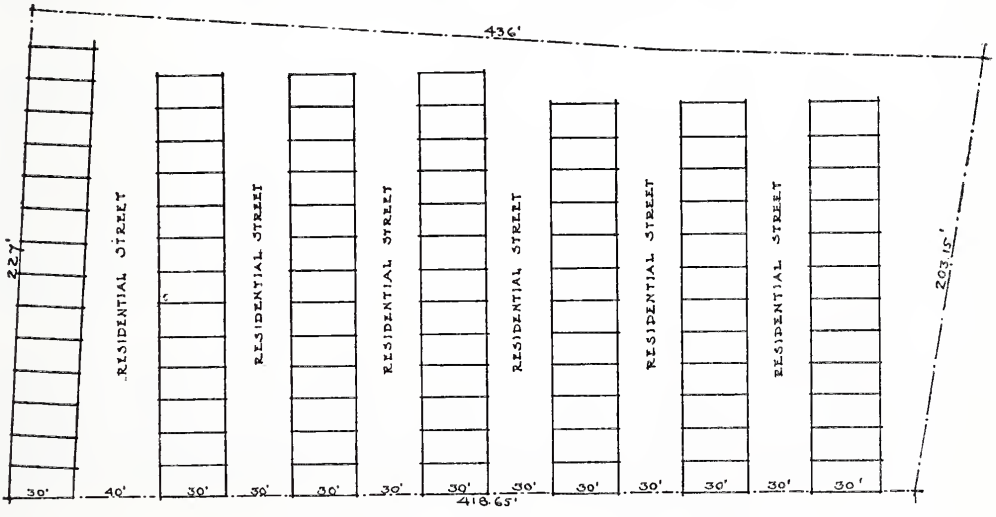
PLAN 2—TWENTY-SIX DETACHED HOUSES.

away part of the land by making new streets once dawns upon the architect, new possibilities of an extremely interesting character open up. By constructing a new street 20 feet wide along the rear of the property and thus giving away practically ten per cent. of the land, the possibilities of this method of treatment at once become apparent; for, frontage has thus been obtained for the otherwise useless rear of the plot and the number of houses that can be placed upon it has been almost doubled. With the first kind of development—namely, continuous rows of Philadelphia houses with 16-foot frontage—it would be possible under this new arrangement to get, in place of 38 houses, 60 houses, as shown in Plan No. 3.

Were it desired to utilize to the highest degree every available inch of land and still not produce bad conditions, it



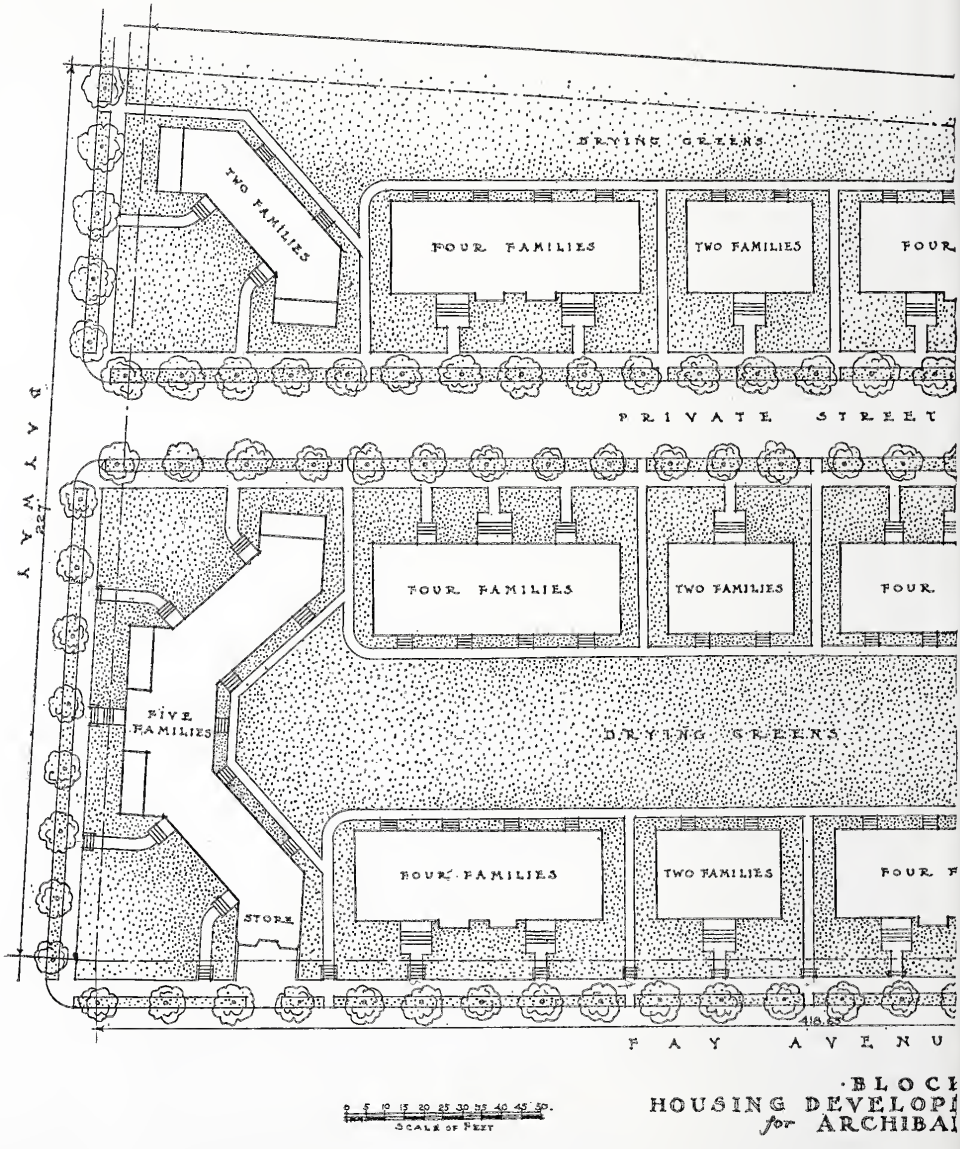
PLAN 3—SIXTY ROW HOUSES, WITH NEW STREET.



PLAN 4—EIGHTY-NINE HOUSES—SIX NEW STREETS.

would be possible under the most concentrated form of housing in small houses to get as many as 89 houses of the Philadelphia type, 16 by 30 feet, built in continuous rows, as shown in Plan No. 4. This result would be achieved by making a series of 30-foot private streets at intervals throughout the length of the plot.

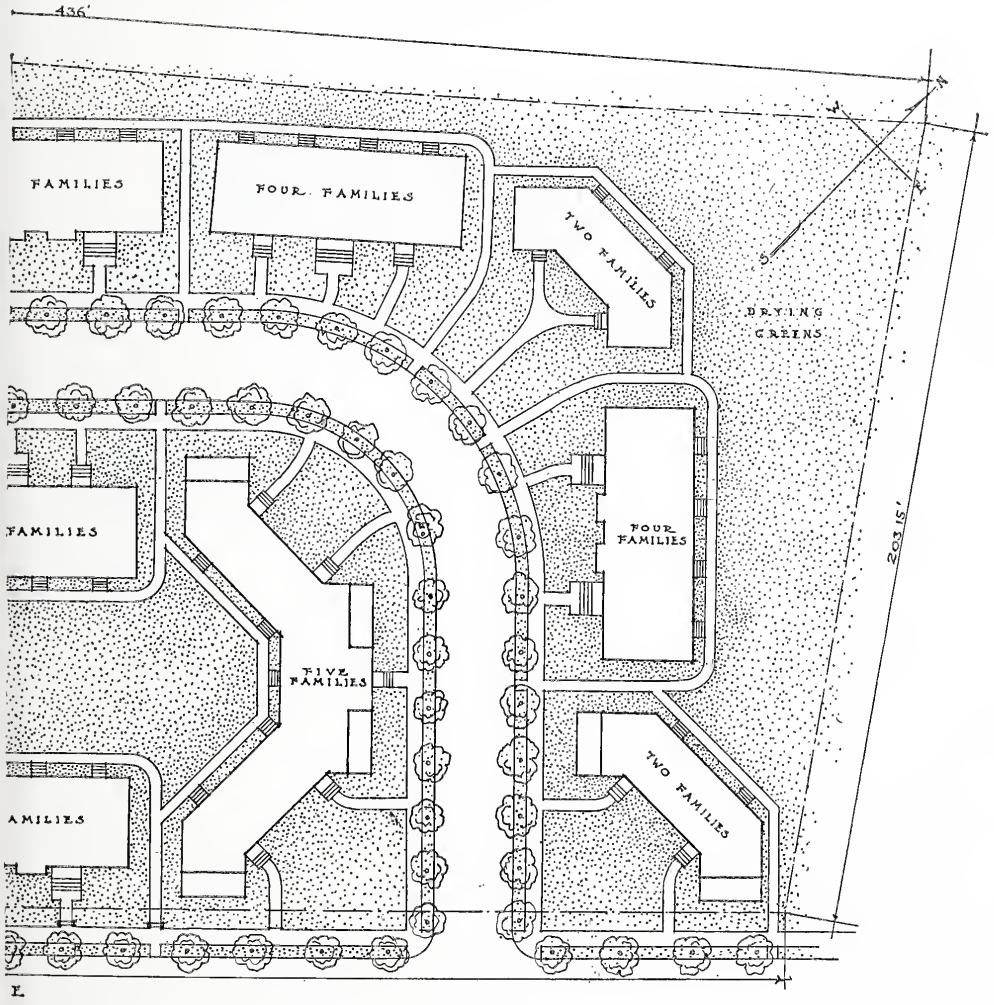
Notwithstanding the high value of the land in this Elizabeth development, the architect, Mr. Dana, in this case very wisely decided not to employ the most concentrated form of housing, but, instead, developed the property with a most charming layout, housing on it 54 families in group houses of two, four and five families in each group. The plan on pages 52 and 53 show the extraordinary skill with which this property has been laid out and the very satisfactory results achieved. It is hard to realize that so attractive a development of an ordinary city block can be obtained. Intelligent study and departure from conventional methods have brought this about. On this plot of only 2 1-5 acres, 54 families



are to be housed in attractive, small houses, not great barracks of tenements, nor dreary, monotonous rows of small houses all alike.

Instead, cottages of the English type of architecture, in stucco, with sloping roofs, set back from the street on grassy terraces planted with trees and shrubs and with ample drying greens at the back, have been provided. The cornerstone of this development was the wise decision of the architect to run a new street through the property. Instead, however, of running this street through as an engineer would have done, bisecting the lot, he has placed it where it would lend charm, and has even had the initiative and boldness to make it a curved street as it turns through the property, thus avoiding, even in this small area, a rectangular effect.

The property is thus divided into two



C · PLAN ·
MENT AT ELIZABETH, N.J..
LD H. BULL ESQ.

MURPHY & DANA, ARCHITECTS
331 MADISON AVE., NEW YORK.

main sections: One fronting along the greater dimensions of the plot has been developed with eight groups of houses; at either end of it are two groups of five-family houses of irregular outline which have all the charm of curved buildings without the additional expense. The irregular outline also secures not only greater attractiveness in the appearance of the whole development, but gives a much greater outlook to the individual houses. These two five-family house groups flank this part of the development. Enclosed between them, facing on the main highway—Fay Avenue—are three groups of houses, two groups of four families each, with a two-family group separating them. Immediately behind them, and similarly placed, but fronting on the new private street, are three similar groups—two four-family ones and one two-family one. Thus has



ENTRANCE FROM FAY AVENUE, TO HOUSING DEVELOPMENT AT ELIZABETH, N. J.
Murphy & Dana, Architects.

been secured balance and harmony of design—but without monotony.

On the remaining portion of the property, on the other side of the new private street, is to be found an exactly similar grouping—namely, two groups of four-family houses, with a two-family group intervening. Distributed over the remainder of the plot are to be found four-family and two-family groups alternating, with the corners of the plot once more delightfully treated with houses of irregular outline.

There are no back yards; there are no fences; there are no property lines. Every bit of the property that is not given up to buildings or to the private street is devoted to lawns, drying greens, and, of course, the necessary footwalks.

With proper planting and maintenance, this whole development should become in a short time a Garden Village in miniature.

The provision of concrete walks practically encircling all of the groups of houses insures convenience of living and proper maintenance of the lawns and drying greens.

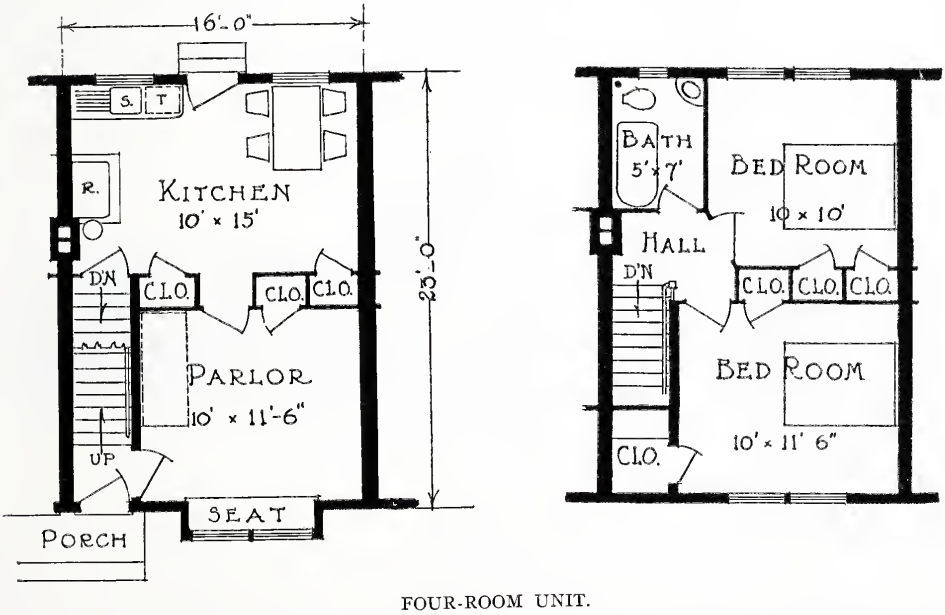
The private street not only gives frontage to portions of the property which otherwise could not be utilized, but also provides a service street for the use of the persons living in this development. Such a street should be narrow, even as narrow as 20 feet; the best city planning practice adopts a standard of 18 feet for the roadway of a street of this character.

As the street will have very little traffic upon it, only being used by such delivery wagons as will enter it for the purpose of making deliveries at the houses fronting on it, the street will serve chiefly as a children's playground, where the children can play on a smooth surface in safety without destroying grass and shrubbery.

Viewing this development from the point of view of the number of families to the acre, it again illustrates in a striking manner the great possibilities of concentrated housing scientifically developed. We have been told for some time now that the best English practice considers eight houses to the acre the proper standard and that even twelve houses to the acre may be permitted. Here 24 families to the acre are provided for, doubling the number that we ordinarily consider the maximum that should be housed under Garden Village conditions.

The only point of adverse comment on the whole layout is possibly the somewhat inadequate distance between the groups of buildings: namely, a little less than 14 feet. There is no question but that the houses would have been more attractive with 20 feet between the groups, but as no house is more than two rooms deep—in fact, does not exceed 23 feet in depth—it is seen that this consideration becomes of far less importance than it ordinarily would.

All of the houses have a front setback from the street sidewalk of 15 feet.



FOUR-ROOM UNIT.

Where groups of houses come opposite each other, there is a clear open space, at the back, of 50 feet between them; between the houses fronting on the two sides of the private street, a distance of 65 feet is maintained. The main group of houses practically encloses an interior park 50 feet wide and 250 feet long, with eight openings 14 feet wide leading into it at various intervals.

Notwithstanding the degree of concentration of housing that is achieved in this development, it is interesting and significant to find that only forty per cent. of the land is occupied by buildings, leaving sixty per cent. unoccupied and kept open for light and air, for gardens, lawns, walks, drying greens and the private residential street.

The scheme that has been adopted here is, of course, only possible where the property involved is to be held and rented to the occupants. It could not be carried out advantageously where individual lots were to be sold; for, there would undoubtedly be great hesitation on the part of the average purchaser in purchasing property subdivided in this way.

As, however, we are learning more and more that the secret of success in industrial housing lies in wise management, this consideration does not become of very great moment. There will be always two classes of people to build for: those who wish to buy, and those who wish to rent. The army of renters increases every day. More and more the working man is becoming averse to buying the home he lives in. From his point of view it interferes with mobility of labor and he feels that all employment is too uncertain to make it wise for him to "chain himself to the job," as he puts it. The employer, on the other hand, is natu-

ı ally anxious to sell houses to the worker because of his belief that it will stabilize his labor supply.

This development at Elizabeth was projected with a definite and clear conception on the part of the owner, Mr. Bull, from the very beginning that he could render a greater service by keeping control of the property and renting it to the occupants, than he could were he to build houses to sell. A consideration of the type of house employed will prove of interest.

THE TYPE OF HOUSE.

Practically all the houses are houses with a 16-foot frontage and 23-foot depth. Three types have been employed, viz., three-room units, four-room units and five-room units. They are all only two rooms deep. The rooms are all of a good size; no room—not even the bedroom—being less than 100 square feet in area, and the rest ranging from kitchens of 150 square feet—10x15—to parlors of 10x11 feet 6 inches, or 115 square feet. The rooms are all well planned, of square shape, and designed with reference to convenience of living. No dining-rooms are provided in any of the houses, as the houses are designed for a class of workers who do not care for a separate dining-room. The kitchen is purposely made large with the knowledge that it will be used as a combined kitchen and dining-room, and the location of the fixtures in the kitchen has been determined with reference to this, so that practically one portion of the room will serve as a dining-room with dining table and chairs, and the balance as a kitchen.

Privacy has been secured by means of a small entry, so that persons will not enter directly into the parlor but into this entry, from which they can immediately ascend to the bedroom story. This has been done partly so as to make possible the use of the parlor at night as a supplementary bedroom, as is so often desired. Thus the occupant who rents a four-room house for $20 a month has a generous kitchen and dining-room combined, a good sized parlor which at night can be used as a bedroom, and two large bedrooms on the second floor with a bathroom immediately adjoining. Every room has two large windows, and all rooms have cross ventilation, a most important consideration. The beds have been planned in the rooms, and the windows, doors and closets located with reference to them.



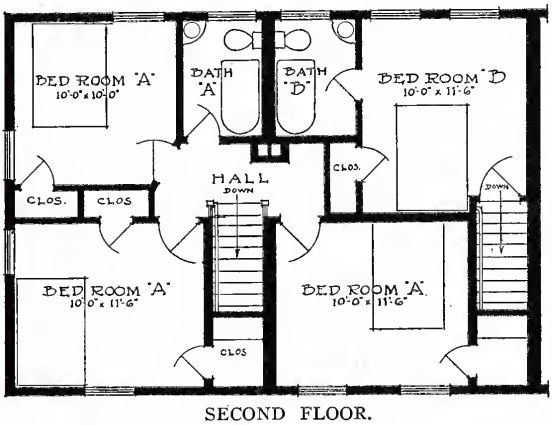
GROUP OF HOUSES ON FAY AVENUE.

Generous and ample clothes closets are provided in all of the bedrooms; in one type there are three closets for two bedrooms as well as generous closet space on the ground floor, even the parlor being provided with a closet—its possible use as a bedroom has been anticipated, a

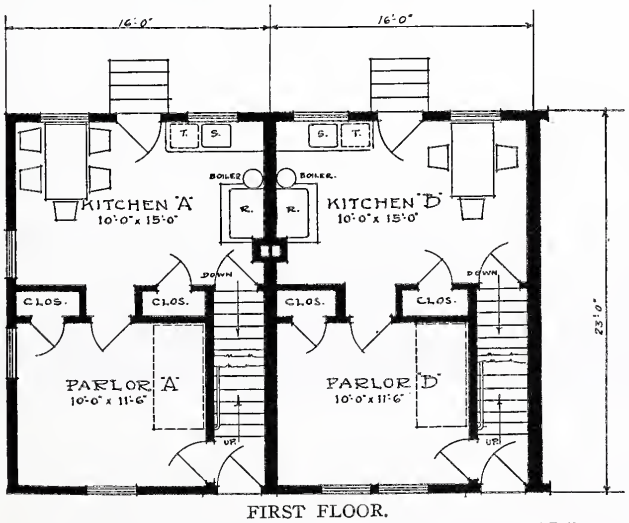
place for a couch bed in the parlor having been definitely located. The kitchens do not have dressers, but, much better, each kitchen has two ample closets, with shelves from the floor to the ceiling; one of these—namely, that next to the range—can be used as a closet for cooking utensils and supplies, while the other closet, located in the dining-room part of the kitchen, is intended to be used more as a dining-room closet for the storage of china, glass, table linen, etc.

All of the houses are provided with ample cellars extending under the whole house, the stairs to the cellar leading directly out of the kitchen, making it very easy for the housewife to have access to supplies stored there. Some of the houses are provided with hot air furnaces in the cellar. The other houses have no heating apparatus, depending upon the kitchen range and upon stoves that may be provided by the occupant.

Each house has a bathroom with bathtub, watercloset and washbowl, all of a modern type. The kitchens are provided with a sink and a single washtub. The ranges are combination coal and gas ranges and are provided with hot water boilers.



SECOND FLOOR.



FIRST FLOOR.

Five-room Unit "A." Three-room Unit "B."

While all of the houses have sloping roofs, the houses have been so designed as not to diminish the story heights on the upper floors or to make the upper

rooms unattractive. One attractive feature is the lattice work connecting the fronts of the various houses and screening the rear from observation, but at the same time affording a vista through to the passerby.

RENTALS.

The three-room houses are to be rented at $16 a month; the four-room houses at $20 a month, a few at $21, and the five-room houses at $26 a month. The store, it is expected, will rent for $30 a month. The following schedules show the distribution of the various types of houses and the number of each kind that has been provided, with the estimated rentals:

SCALE OF RENTALS.

Type	Rooms	Families	Per Month	
B	3	6	$16	$96
A	4	28	20	560
C	4	11	20	220
D	4	2	21	42
B	5	6	26	156
C	Store	1	30	30
Total		54		$1,104

COSTS.

The costs of this enterprise are of equal interest. The land cost $4,100, and it has cost about $10,000 to improve it, as usual the cost of developing the land being about twice the cost of the raw land. The 54 houses have cost $113,813, giving an average cost per house of $2,100, in round figures, not including the architect's commission and incidentals. As stated by the architect, the total cost of the whole development amounts to $132,500, which would make the houses, with the land, cost on an average of $2,454 apiece. The rents that it is proposed to charge have been estimated on a basis of a gross return of ten per cent., which, with proper management, and with the small bill for depreciation that there should be owing to the care with which the houses have been built, should yield a proper return to the investor of certainly five per cent. net, and in all probability six per cent.

SCHEDULE OF COSTS.

Cost of Land.....	$4,100
Cost of Improvements (Grading, Streets, Sewers, etc.), approximately	10,000
Cost of Houses.....	113,813
Architect's Commission, approximately.....	3,000
Incidentals	1,587
Total $132,500	

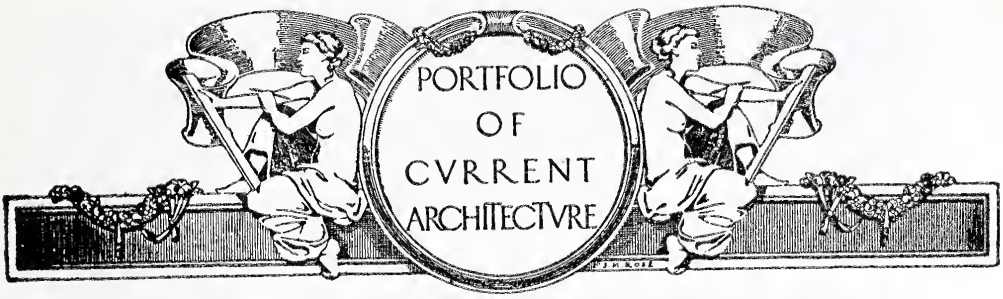
10% Gross Return...$13,250 per year
$13,250 = ... 1,104 per month

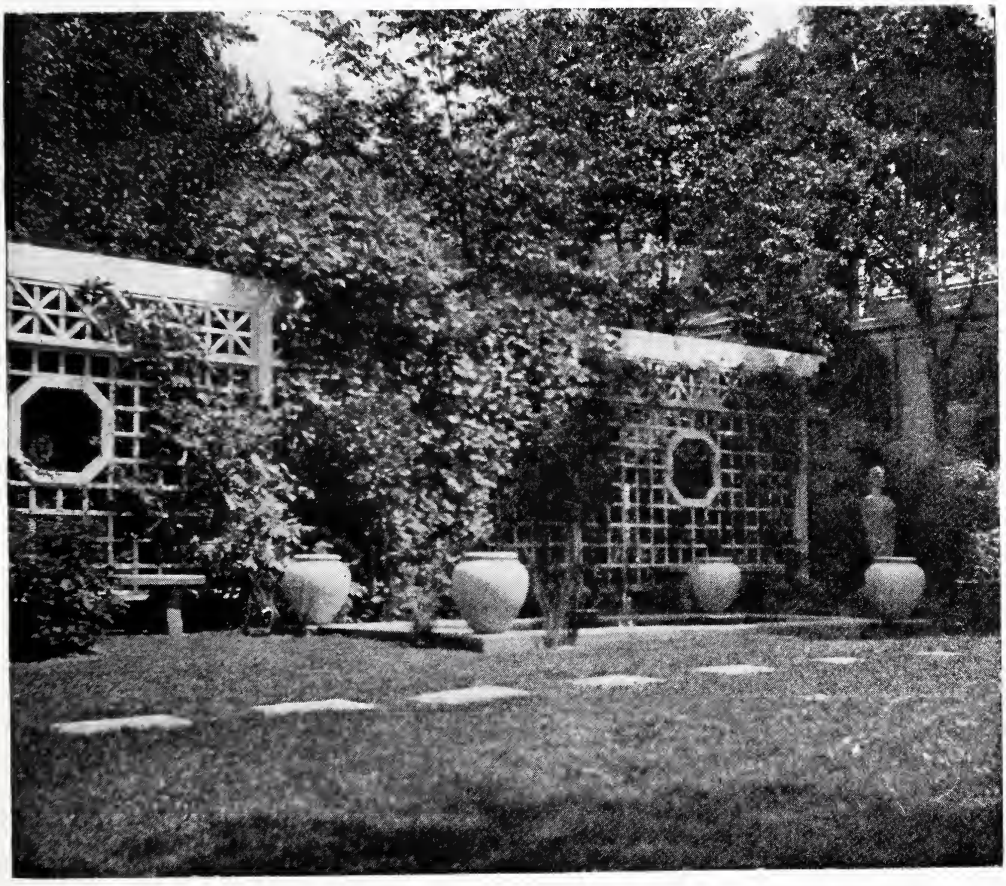
The houses are of a distinctly English type of cottage construction, built of frame, with stucco over wire lath, and set on concrete foundations. The whole development consists of sixteen group houses, providing accommodations for 54 families and one store, a grocery store located at the corner of the two main streets on which the property abuts.

This is considered essential, as the houses are about a mile from the main business centre of the town where stores are to be found, and the location of this little neighborhood store in the colony itself will make greatly for the increased comfort and convenience of the occupants.

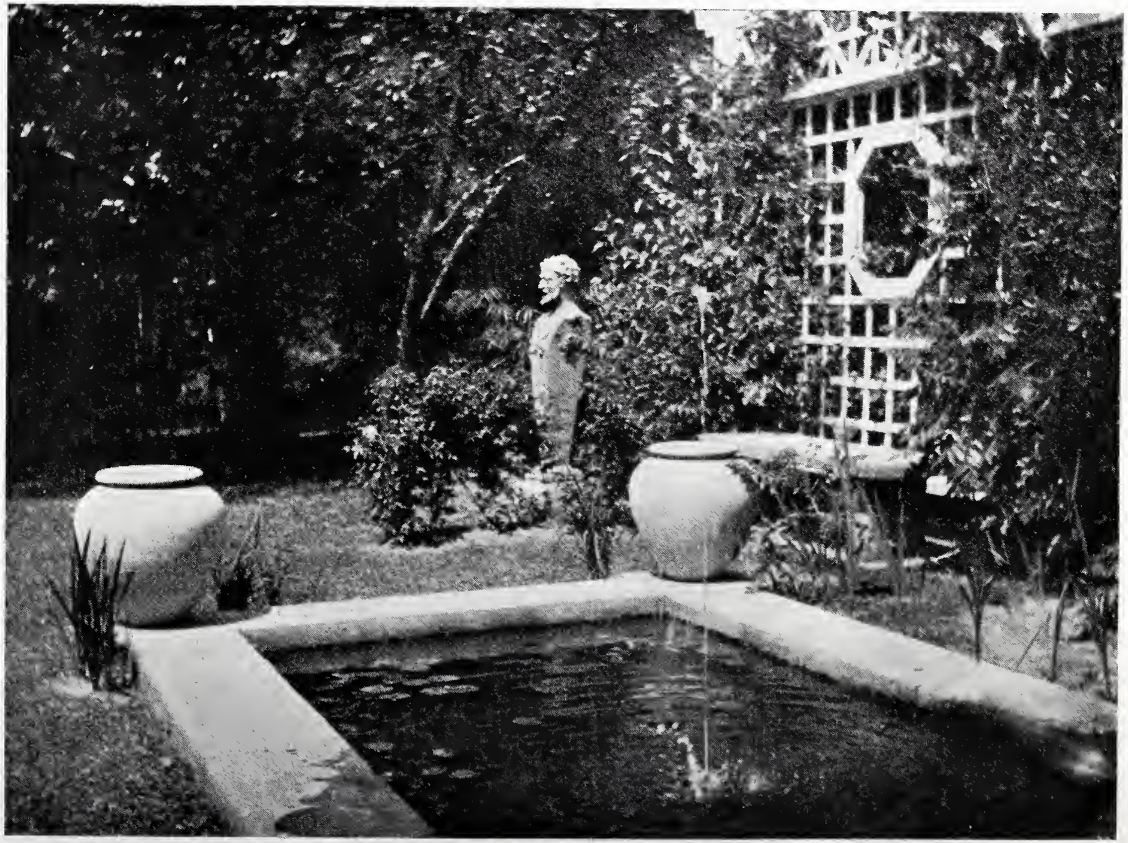
The development is located within a half mile of the United States aeroplane plant and other large factories and is conveniently accessible to the main part of Elizabeth, as it is only one block distant from the Lincoln Highway, along which run five-cent auto busses leading directly into the centre of town.

Mr. Dana has not only added to the attractive industrial housing developments of the country, but has made a distinct contribution to the art of city planning. The practical object lesson that he has afforded in this case of the possibilities of developing a comparatively small plot of ground, as small even as two acres, in the heart of a city should prove of the greatest value to the architects and city planners of this country.





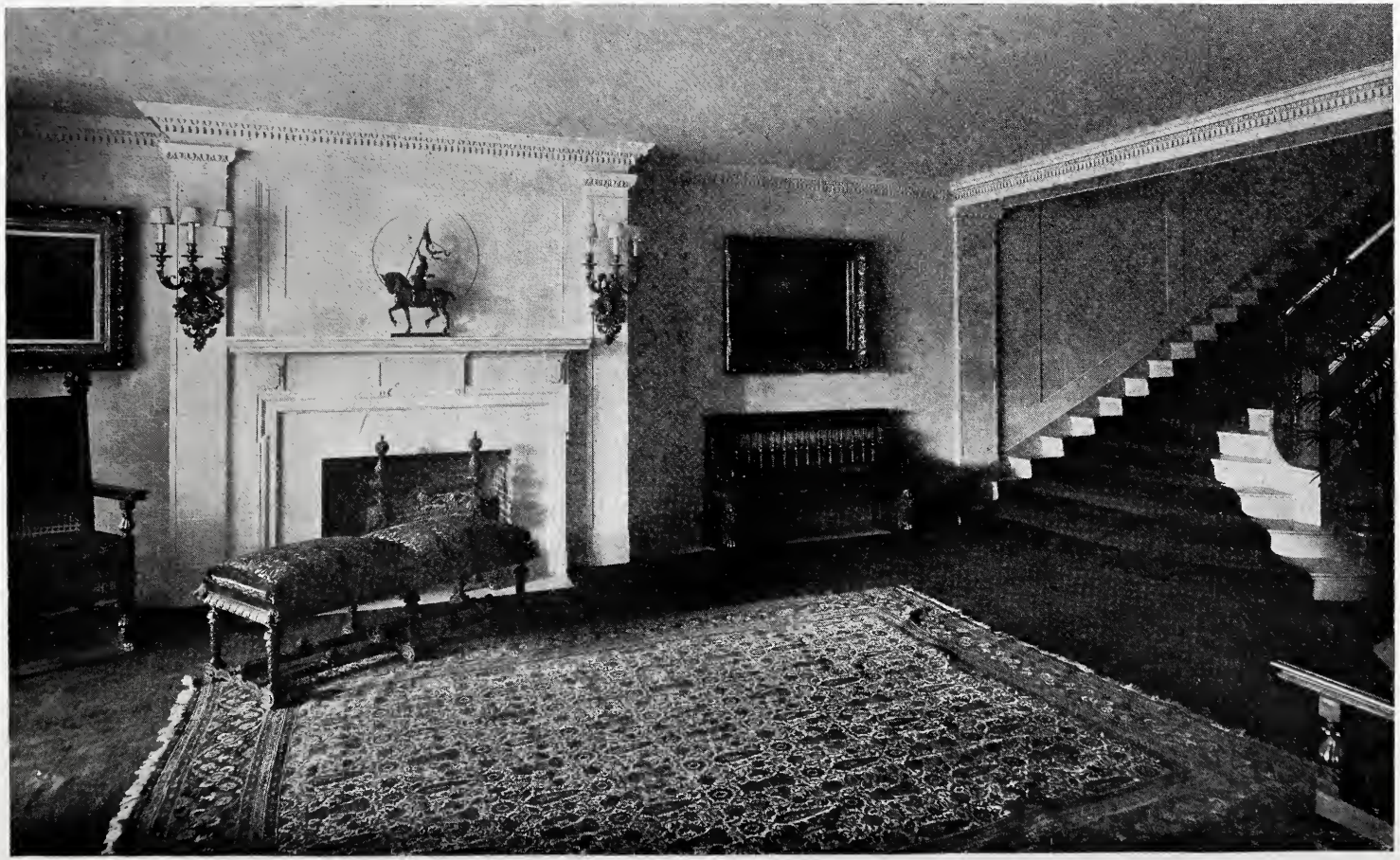
DETAIL IN GARDEN OF DR. JAMES TAGGART PRIESTLEY, DES MOINES, IOWA. RAY FLOYD WEIRICK, LANDSCAPE ARCHITECT. THE TREILLAGE WAS PUT UP TO HIDE AN OBJECTIONABLE VIEW ON THE ABUTTING PROPERTY.



DETAIL IN GARDEN OF DR. JAMES TAGGART PRIESTLEY, DES MOINES, IOWA. CONCEALED LIGHTS ILLUMINATE THIS PART OF THE GARDEN AT NIGHT, ONE IN THE FOUNTAIN BASIN TO BRIGHTEN UP THE WATER AND THREE BEHIND THE TREILLAGE TO CAST AN INTERESTING SHADOW SCHEME ON THE LAWN.



MAIN HALL—RESIDENCE OF ADOLPH LEWISOHN, ESQ., NEW YORK. C. P. H. GILBERT, ARCHITECT.



LOWER HALL—RESIDENCE OF ADOLPH LEWISOHN, ESQ., NEW YORK. C. P. H. GILBERT, ARCHITECT.



ART GALLERY—RESIDENCE OF ADOLPH LEWISOHN, ESQ., NEW YORK.
C. P. H. Gilbert, Architect.



BREAKFAST ROOM—RESIDENCE OF ADOLPH LEWISOHN, ESQ., NEW YORK.
C. P. H. Gilbert, Architect.



DETAIL OF BALLROOM—RESIDENCE OF ADOLPH LEWISOHN, ESQ., NEW YORK. C. P. H. GILBERT, ARCHITECT.



DOORWAY—HALL OF CLASSICAL SCULPTURE, METROPOLITAN MUSEUM OF ART, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



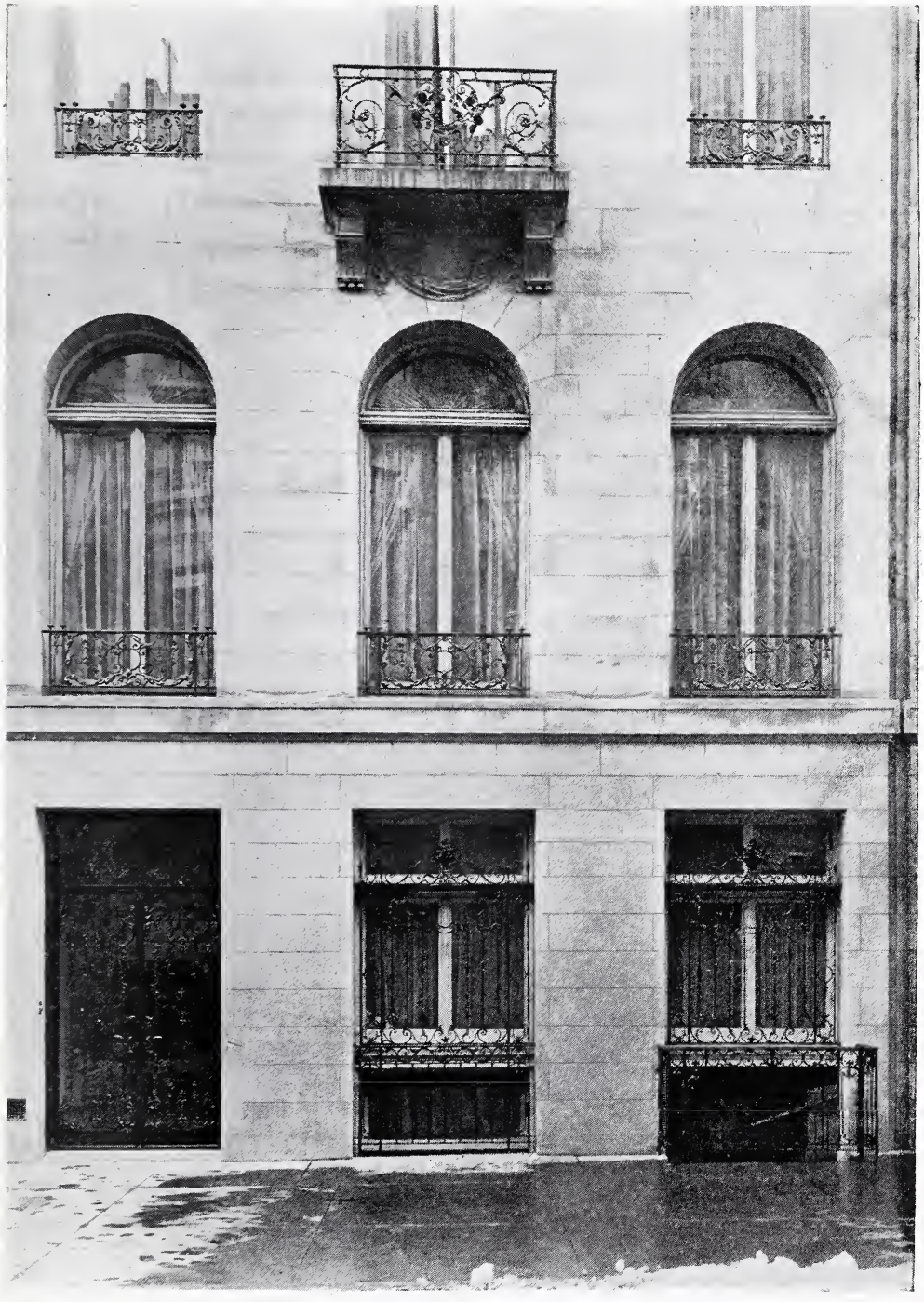
HALL OF CLASSICAL SCULPTURE, METROPOLITAN MUSEUM OF ART, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



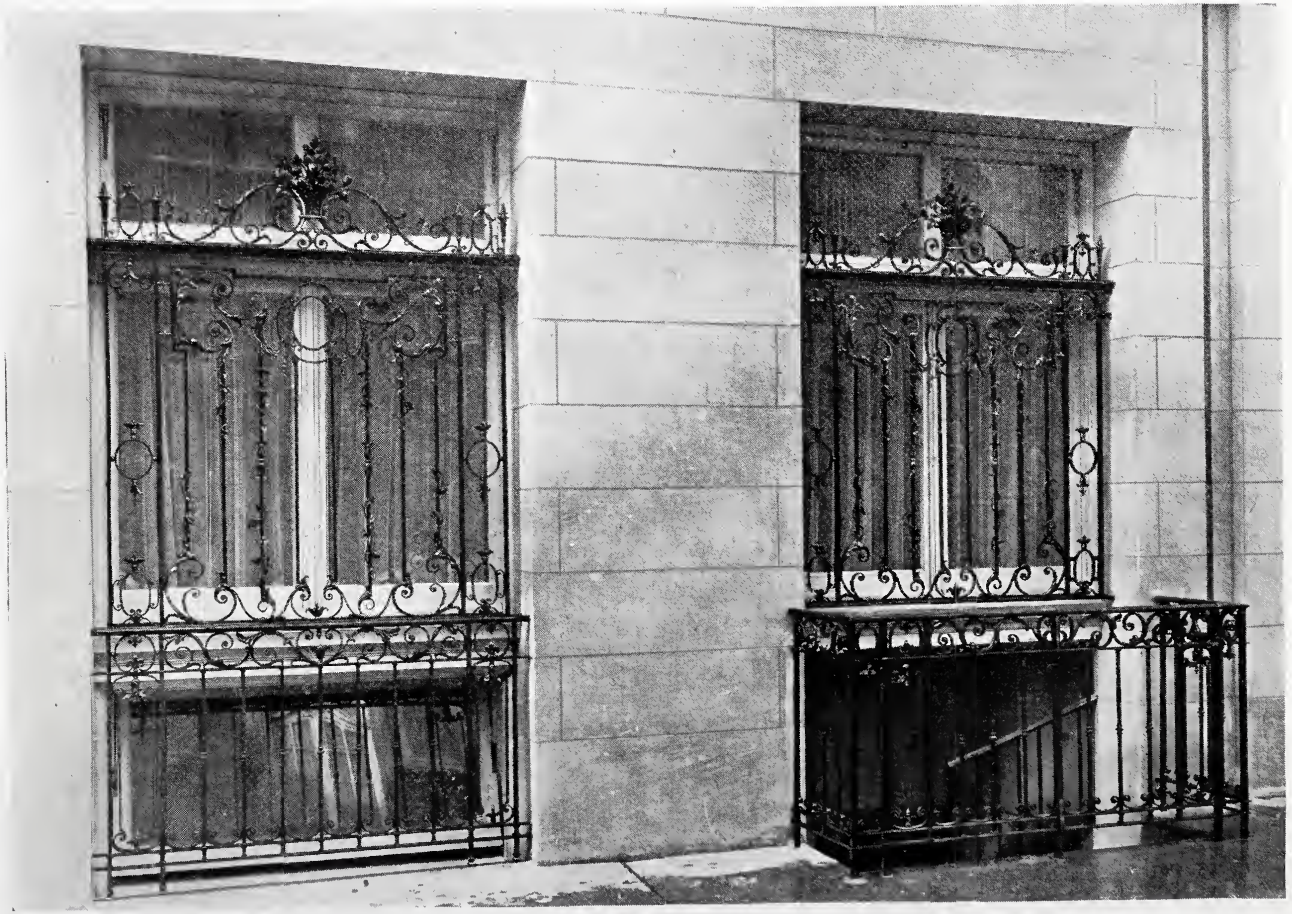
DETAIL OF END WALL—HALL OF CLASSICAL SCULPTURE, METROPOLITAN MUSEUM OF ART, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



LOOKING TOWARD MAIN ENTRANCE—HALL OF CLASSICAL SCULPTURE, METROPOLITAN MUSEUM OF ART, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



IRONWORK DESIGNED BY CROSS & CROSS, ARCHITECTS, FOR THE RESIDENCE OF CHARLES H. SABIN, ESQ., NEW YORK CITY.



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IRONWORK DESIGNED BY CROSS & CROSS, ARCHITECTS, FOR THE RESIDENCE OF AMBROSE MONELL, ESQ., NEW YORK CITY.



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IRONWORK DESIGNED BY CROSS & CROSS, ARCHITECTS, FOR THE RESIDENCE OF CHARLES H. SABIN, ESQ., NEW YORK CITY.

ARCHITECTURE *and* DEMOCRACY

Before, During and After the War

By CLAUDE BRAGDON, F.A.I.A.

I.—BEFORE THE WAR

THE world war represents not the triumph, but the birth of democracy. The true ideal of democracy–the rule of a people by its *demos,* or oversoul—is a thing unrealized. How, then, is it possible to consider or discuss an architecture of democracy—the shadow of a shade? It is not possible to do so with any degree of finality, but by an intention of consciousness upon this juxtaposition of ideas–architecture and democracy—signs of the times may yield new meanings, relations may emerge between things apparently unrelated, and the future, always existent in every present moment, may be evoked by that strange magic which resides in the human mind.

> *Every form of government, every social institution, every undertaking, however great, however small, every symbol of enlightenment or degradation, each and all have sprung and are still springing from the life of the people, and have ever formed and are now as surely forming images of their thought. Slowly by centuries, generations, years, days, hours, the thought of the people has changed; so with precision have their acts responsively changed; thus thoughts and acts have flowed and are flowing ever onward, unceasingly onward, involved within the impelling power of Life. Throughout this stream of human life, and thought, and activity, men have ever felt the need to build; and from the need arose the power to build. So, as they thought, they built; for, strange as it may seem, they could build in no other way. As they built, they made, used, and left behind them records of their thinking. Then, as through the years new men came with changed thoughts, so arose new buildings in consonance with the change of thought—the building always the expression of the thinking. Whatever the character of the thinking, just so was the character of the building.*—LOUIS SULLIVAN *in "What is Architecture? A Study in the American People of To-day."*

Architecture at its worst, as at its best, reflects always a true image of the thing that produced it; a building is revealing even though it is false, just as the face of a liar tells the thing his words endeavor to conceal. This being so, let us make such architecture as is ours declare to us our true estate.

The architecture of the United States, from the period of the Civil War up to the beginning of the present crisis, everywhere reflects a struggle to be free of a vicious and depraved form of feudalism, grown strong under the very aegis of democracy. The qualities that made feudalism endeared and enduring: qualities written in beauty on the cathedral cities of medieval Europe—faith, worship, loyalty, magnanimity—were either vanished or banished from this pseudo-democratic, aridly scientific feudalism, leaving an inheritance of strife and tyranny—a strife grown mean, a tyranny grown prudent, but full of sinister power, the weight of which we have by no means ceased to feel.

Power, strangely mingled with timidity; ingenuity, frequently misdirected; ugliness, the result of a false ideal of beauty—these in general characterize the architecture of our immediate past; an architecture "without ancestry or hope of posterity," an architecture devoid of coherence or conviction; willing to lie, willing to steal. What impression such a city as Chicago or Pittsburgh might have made upon some denizen of those cathedral-crowned feudal cities of the past we do not know. He would certainly have been amazed at its giant energy, and probably revolted at its grimy dreariness. We are wont to pity the medieval man for the dirt he lived in, even while smoke grays our sky and dirt permeates the very air

we breathe; we think of castles as grim and cathedrals as dim, but they were beautiful and gay with color compared with the grim, dim canyons of our city streets.

Lafcadio Hearn, in *A Conservative,* has sketched for us, with a sympathy truly clairvoyant, the impression made by the cities of the West upon the consciousness of a young Japanese samurai educated under a feudalism not unlike that of the Middle Ages, wherein was worship, reverence, poetry, loyalty—however strangely compounded with the more sinister products of the feudal state.

> Larger than all anticipation the West appeared to him,—a world of giants; and that which depresses even the boldest Occidental who finds himself, without means or friends, alone in a great city, must often have depressed the Oriental exile: that vague uneasiness aroused by the sense of being invisible to hurrying millions; by the ceaseless roar of traffic drowning voices; by monstrosities of architecture without a soul; by the dynamic display of wealth forcing mind and hand, as mere cheap machinery, to the uttermost limits of the possible. Perhaps he saw such cities as Doré saw London: sullen majesty of arched glooms, and granite deeps opening into granite deeps beyond range of vision, and mountains of masonry with seas of labor in turmoil at their base, and monumental spaces displaying the grimness of ordered power slow-gathering through centuries. Of beauty there was nothing to make appeal to him between those endless cliffs of stone which walled out the sunrise and the sunset, the sky and the wind.

The view of our pre-war architecture thus sketchily presented is sure to be sharply challenged in certain quarters, but, unfortunately for us all, this is no mere matter of opinion; it is a matter of fact. The buildings are there, open to observation; rooted to the spot, they cannot run away. Like criminals "caught with the goods," they stand, self-convicted, dirty with the soot of a thousand chimneys, heavy with the spoils of vanished civilizations; graft and greed stare at us out of their glazed windows—eyes behind which no soul can be discerned. There are doubtless extenuating circumstances; they want to be clean, they want to be honest, these "monsters of the mere market," but they are nevertheless the unconscious victims of evils inherent in our transitional social state.

Let us examine these strange creatures, doomed, let us hope, to extinction in favor of more intelligent and gracious forms of life. They are big, powerful, "necessitous," and have therefore an impressiveness, even an esthetic appeal not to be denied. So subtle and sensitive an old-world consciousness as that of M. Paul Bourget was set vibrating by them like a violin to the concussion of a trip-hammer, and to the following tune:

> The portals of the basements, usually arched as if crushed beneath the weight of the mountains which they support, look like dens of a primitive race, continually receiving and pouring forth a stream of people. You lift your eyes, and you feel that up there behind the perpendicular wall, with its innumerable windows, is a multitude coming and going—crowding the offices that perforate these cliffs of brick and iron, dizzied with the speed of the elevators. You divine, you feel the hot breath of speculation quivering behind these windows. This it is which has fecundated these thousands of square feet of earth, in order that from them may spring up this appalling growth of business palaces, that hide the sun from you and almost shut out the light of day.

"The simple power of necessity is to a certain degree a principle of beauty," says M. Bourget, and to these structures this order of beauty cannot be denied, but even this is vitiated by a failure to press the advantage home; the ornate façades are notably less impressive than those whose grim and stark geometry is unmitigated by the grave-clothes of dead styles. Instances there are of strivings toward a beauty that is fresh and living, but they are so unsuccessful and infrequent as to be negligible. However impressive these buildings may be by reason of their ordered geometry, their weight and magnitude, and as a manifestation of irrepressible power, they have the unloveliness of things ignoble, being the product neither of praise, nor joy, nor worship, but enclosures for the transaction of sharp bargains—gold-bringing jinn of our modern Aladdins, who love them not but only use them. That is the reason they are ugly: no one has loved them for themselves alone.

For beauty is ever the very face of love. From the architecture of a true democracy, founded on love and mutual service, beauty would inevitably shine forth; its absence convicts us of a mal-

adjustment in our social and economic life. A skyscraper shouldering itself aloft at the expense of its more humble neighbors, stealing their air and their sunlight, is a symbol, written large against the sky, of the will-to-power of a man or a group of men—of that ruthless and tireless aggression on the part of the cunning and the strong so characteristic of the period which produced the skyscraper. One of our streets made up of buildings of diverse styles and shapes and sizes—like a jaw with some teeth whole, some broken, some rotten, and some gone—is a symbol of our unkept individualism, now happily becoming curbed and chastened by a common danger, a common devotion.

Some people hold the view that our insensitiveness to formal beauty is no disgrace. Such argue that our accomplishments and our interests are in other fields, where we more than match the accomplishments of older civilizations. They forget that every achievement not registered in terms of beauty has failed of its final and enduring transmutation. It is because the achievements of older civilizations attained to their apotheosis in art that they interest us, and unless we are able to effect a corresponding transmutation we are destined to perish unhonored on our rubbish heap. That we shall effect it, through knoweldge and suffering, is certain; but before attempting the more genial and rewarding task of tracing, in our life and in our architecture, those forces and powers which make for righteousness, for beauty, let us look our failures squarely in the face, and discover, if we can, why they are failures.

Confining this examination to the particular matter under discussion, the neofeudal architecture of our city streets, we find it to lack unity, and that the reason for this lack of unity dwells in a *divided consciousness.* The tall office building is the product of many forces, or perhaps we should say one force—that of necessity—but its concrete embodiment is the result of two different orders of talent: that of the structural engineer and of the architectural designer. These are usually incarnate in two different individuals working more or less at cross purposes. It is the business of the engineer to preoccupy himself solely with ideas of efficiency and economy, and over his efficient and economical structure the designer smears a frosting of beauty in the form of architectural style, in the archeological sense. This is a foolish practice and cannot but result in failure. In the case of a Greek temple or a medieval cathedral structure and style were not twain, but one; the structure determined the style, the style expressed the structure; but with us so divorced have the two things become that in a case known to the author the structural framework of a great office building was determined and fabricated and then architects were invited to "submit designs" for the exterior. This is of course an extreme example and does not represent the usual practice, but it brings sharply to consciousness the well-known fact that for these buildings we have substantially one method of construction—that of the vertical strut and the horizontal "fill"—while in style they appear as Grecian, Roman, Renaissance, Gothic, Modern French and what not, according to the whim of the designer.

With the modern tendency toward specialization, the natural outgrowth of necessity, there is no inherent reason why the bones of a building should not be devised by one man and its fleshly clothing by another, so long as they understand one another and are in ideal agreement; but there is in general all too little understanding and a confusion of ideas and aims.

To the average structural engineer the architectural designer is a mere milliner in stone, informed in those prevailing architectural fashions of which he himself knows little and cares less. Preoccupied as he is with the building's strength, safety, economy; solving new and staggeringly difficult problems with address and daring; he has scant sympathy with such inconsequent matters as the stylistic purity of a façade or the profile of a molding. To the designer, on the other hand, the engineer appears in the light of a subordinate to be used for the promotion of his own ends, or an



ERIE COUNTY BANK BUILDING, BUFFALO, N. Y.



PRUDENTIAL BUILDING, BUFFALO, N. Y.



DETAIL OF PRUDENTIAL BUILDING, BUFFALO, N. Y.



GENERAL VIEW OF THE DOWNTOWN SECTION OF NEW YORK SHOWING THE WEEDLIKE GROWTH OF THE CITY.

evil to be endured as an interference with those ends.

As a result of this lack of sympathy and coordination, success crowns only those efforts in which, on the one hand, the stylist has been completely subordinated to engineering necessity, as in the case of the East River bridges, where the architect was called upon only to add a final grace to the strictly structural towers; or, on the other hand, in which the structure is of the old-fashioned masonry sort and faced with a familiar problem the architect has found it easy to be frank, as in the case of the Manhattan Storage Warehouse on Forty-second street, New York, or in the Bryant Park façade on the New York Library. The Woolworth Building is a notable example of the complete coordination between the structural framework and its envelope and falls short of ideal success only in the employment of an archaic and alien ornamental language, used however, let it be said, with a fine understanding of the function of ornament.

For the most part, though, there is a difference of intention between the engineer and the designer; they look two ways, and the result of their collaboration is a flat and confused image of the thing that should be, not such as is produced by truly binocular vision. This difference of aim is largely the result of a difference of education. Engineering science of the sort which the use of steel has required is a thing unprecedented; the engineer cannot hark back to the past for help even if he would. The case is different with the architectural designer; he is taught that all of the best songs have been sung, all of the true words spoken. The Glory that was Greece, and the Grandeur that was Rome, the romantic exuberance of Gothic, and the ordered restraint of Renaissance are so drummed into him during his years of training and exercise so tyrannical a spell over his imagination that he loses the power of clear and logical thought and never becomes truly creative. Free of this incubus, the engineer has succeeded in being straightforward and sensible, to say the least; subject to it the man with a so-called architectural education is too often tortuous and absurd.

The architect without any training in the essentials of design produces horrors as a matter of course, on the principle that sin is the result of ignorance; the architect trained in the false manner of the current schools becomes a reconstructive archeologist, handicapped with conditions with which he can deal only imperfectly and imperfectly control. Once in a blue moon a man arises who, with all the advantages inherent in education, pierces through the past to the present, and is able to use his brain as the architects of the past used theirs—to deal simply and directly with his immediate problem.

Such a man is Louis Sullivan, though it must be admitted that not always has he achieved success. That success was so marked, however, in his treatment of the problem of the tall building, and exercised subconsciously such a spell upon the minds even of his critics and detractors, that it resulted in the emancipation of this type of building from an absurd and impossible convention—the practice, common before his time—of piling order upon order, like a house of cards, or by a succession of strongly-marked string-courses emphasizing the horizontal dimension of a vertical edifice, thus vitiating the finest effect of which such a building is capable.

The problem of the tall building, with which his precursors dealt always with trepidation and equivocation, Mr. Sullivan approached with confidence and joy. "What," he asked himself, "is the chief characteristic of the tall office building? It is lofty. This loftiness is to the artist nature its thrilling aspect. It must be tall. The force of altitude must be in it. It must be every inch a proud and soaring thing, rising in sheer exultation that from bottom to top it is a unit without a dissenting line." The Prudential (Guaranty) building in Buffalo represents the finest concrete embodiment of his idea achieved by Mr. Sullivan. It marks his emancipation from what he calls his "masonry" period, during which he tried, like so many other architects before and since, to make a steel-frame structure

look as though it were nothing but a masonry wall perforated with openings —openings too many and too great not to endanger its stability. The keen blade of Mr. Sullivan's mind cut through this contradiction, and in the Prudential Building he carried out the idea of a *protective casing* so successfully that Montgomery Schuyler said of it, "I know of no steel framed building in which the metallic construction is more palpably felt through the envelope of baked clay."

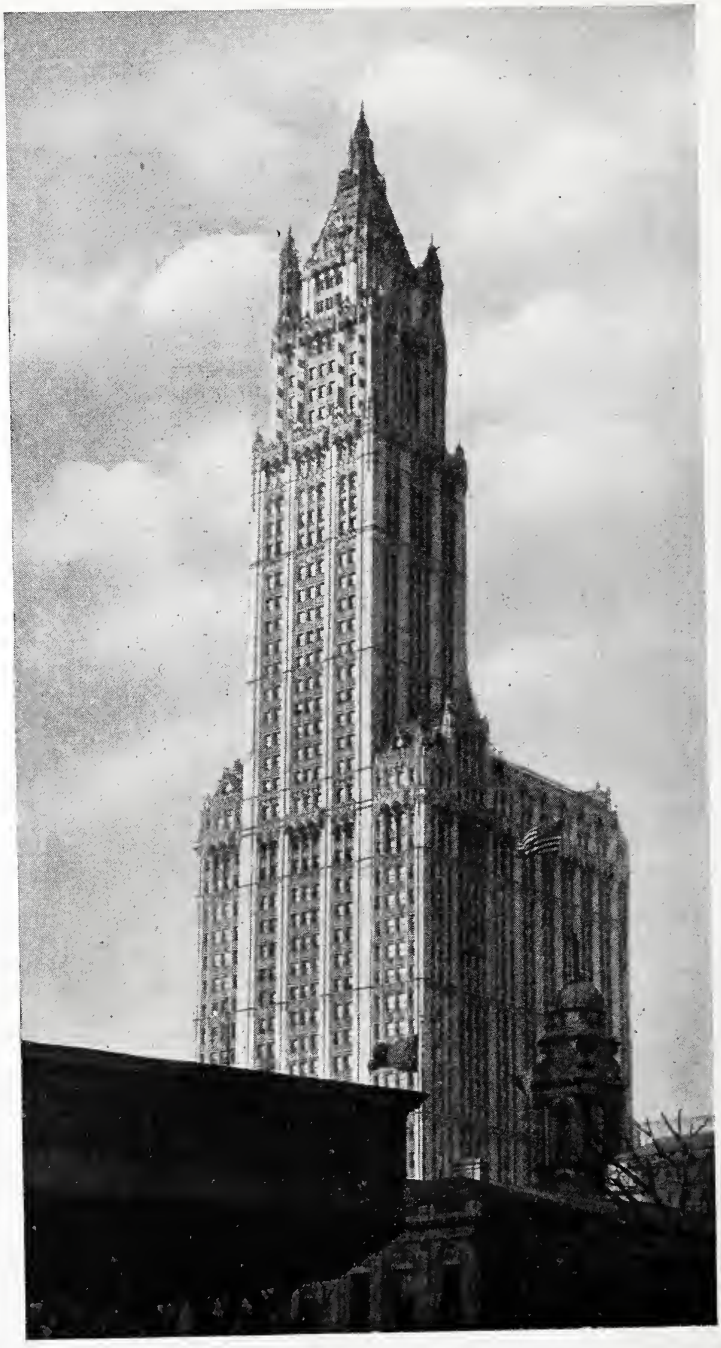
The present author can speak with all humbleness of the general failure on the part of the architectural profession to appreciate the importance of this achievement, for he pleads guilty of day after day having passed the Prudential Building, then fresh in the majesty of its soaring lines, and in the wonder of its fire-wrought casing, with eyes and admiration only for the false romanticism of the Erie County Savings Bank, and the empty bombast of the gigantic Ellicott Square. He had not at that period of his life succeeded in living down his architectural training, and as a result the most ignorant layman was in a better position to appraise the relative merits of these three so different incarnations of the building impulse than was he.

Since the Prudential Building there have been other tall office buildings by other hands, truthful in the main, less rigid, less montonous, more superficially pleasing, yet they somehow fail to impart the feeling of utter sincerity and fresh originality inspired by this building. One feels that here democracy has at last found utterance in beauty; the American spirit speaks; the spirit of the Long Denied. This rude, rectangular bulk is uncompromisingly practical and utilitarian; these rows on rows of windows, regularly spaced and all of the same size, suggest the equality and monotony of obscure, laborious lives; the upspringing shafts of the vertical piers stand for their hopes and aspirations, and the unobtrusive, delicate ornament which covers the whole with a garment of fresh beauty is like the very texture of their dreams. The building is able to speak thus powerfully to the imagination because its creator is a poet and prophet of democracy. In his own chosen language he declares, as Whitman did in verse, his faith in the people of "these states"— "A Nation announcing itself." Others will doubtless follow who will make a richer music, commensurate with the future's richer life, but such democracy as is ours stands here proclaimed, just as such feudalism as is still ours stands proclaimed in the Erie County Bank just across the way. The massive rough stone walls of this building, its pointed towers and many dormered chateau-like roof unconsciously symbolize the attempt to impose upon the living present a moribund and alien order. Democracy is thus afflicted, and the fact must needs find its appropriate architectural expression.

In the field of domestic architecture these dramatic contrasts are less evident, less sharply marked. Domestic life varies little from age to age; a cottage is a cottage the world over, and some manorial mansion on the James river, built in Colonial days, remains a fitting habitation for one of our Captains of Industry (assuming the addition of electric lights and sanitary plumbing) however little an ancient tobacco warehouse would serve him as a place of business. This fact is so well recognized that the finest type of modern country house follows, in general, this or some other equally admirable model, though it is amusing to note the millionaire's preference for a feudal castle, a French chateau or an Italian villa of the decadence.

The "man of moderate means," so called, provides himself with no difficulty with a comfortable home, undistinguished but unpretentious, which fits him like a glove. There is a piazza towards the street, a bay-window in the living room, a sleeping porch for the children, and a box of a garage for the flivver in the bit of a back yard.

For the wage earner the housing problem is not so easily nor so successfully solved. He is usually between the devil of the speculative builder and the deep sea of the predatory landlord, each intent upon taking from him the limit that the law allows and giving him as little as possible for his money. Going down



WOOLWORTH BUILDING FROM
MUNICIPAL BUILDING ARCH.

the scale of indigence we find an itiniracy amounting almost to homelessness, or homes so abject that they are an insult to the very name of home.

It is an eloquent commentary upon our national attitude toward a most vital matter that in this feverish hustle to produce ships, aeroplanes, clothing, and munitions on a vast scale, the housing of the workers was either overlooked entirely or received eleventh-hour consideration, and only now, after a year of war, is it beginning to be adequately and officially dealt with—efficiently and intelligently remains to be seen. The housing of the soldiers was another matter; that necessity was plain and urgent, and the miracle has been accomplished, but except by indirection it has contributed nothing to the permanent housing problem.

Other aspects of our life which have found architectural expression fall neither in the commercial nor in the domestic category—the great hotels, for example, which partake of the nature of both, and our passenger railway terminals, which partake of the nature of neither. These latter deserve especial consideration in this connection by reason of their important function. The railway is of the very essence of the modern, even though (with what sublime unreason) Imperial Rome is written large over New York's most magnificent portal.

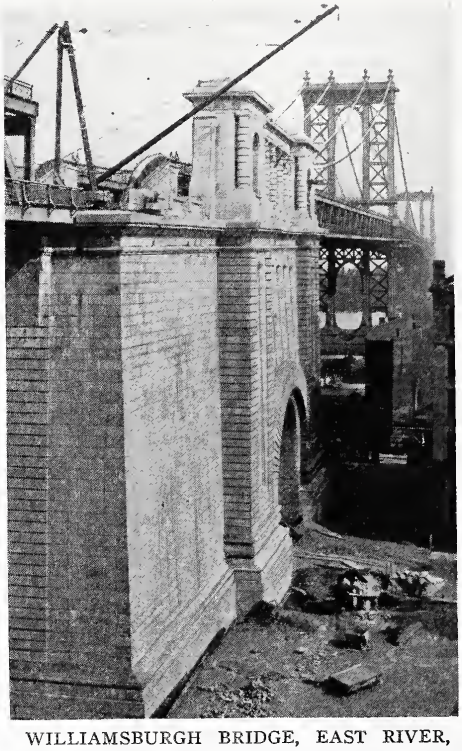
Think not that in an age of unfaith mankind gives up the building of temples. Temples inevitably arise where the tide of life flows strongest; for there God manifests, in however strange a guise. That tide is nowhere stronger than in the railroad, which is the arterial system of our civilization. All arteries lead to and from the heart, and thus the railroad terminus becomes the beating heart at the centre of modern life. It is a true instinct, therefore, which prompts to the making of the terminal building a very temple, a monument to the conquest of space through the harnessing of the giant horses of electricity and steam. This conquest must be celebrated on a scale commensurate with its importance, and in obedience to this necessity the Pennsylvania station raised its proud head amid the push-cart architecture of that portion of New York in which it stands. It is not, therefore, open to the criticism often passed upon it, that it is too grand, but it is the wrong kind of grandeur. If there is truth in the contention that the living needs of today cannot be grafted on to the dead stump of any ancient grandeur, the futility of every attempt to accomplish this impossible will somehow, somewhere, reveal itself to the discerning eye. Let us seek out, in this building, the place of this betrayal.

It is not necessarily in the main façade, though this is not a face, but a mask, and a mask can, after its kind, always be made beautiful; it is not in the nobly vaulted corridor, lined with shops, for all we know the arcades of Imperial Rome were similarly lined; nor is it in the splendid vestibule, leading into the magnificent waiting room, in which a subject of the Caesars would have felt more perfectly at home, perhaps, than do we. But beyond this passenger concourse, where the elevators and stairways descend to the tracks, necessity demanded the construction of a great enclosure, supported only on slender columns and far-flung trusses roofed with glass. Now latticed columns, steel trusses and wire glass are inventions of the modern world too useful to be dispensed with. Rome could not help the architect here. The mode to which he was inexorably self-committed in the rest of the building demanded massive masonry, cornices, moldings; a tribute to Caesar which could be paid everywhere but in this place. The architect's problem then became to reconcile two diametrically different systems. But between the west wall of the ancient Roman baths and the modern skeleton construction of the roof of the human greenhouse there is no attempt at fusion. The slender latticed columns cut unpleasantly through the granite cornices and moldings; the first century A. D. and the twentieth are here in incongruous juxtaposition—a little thing, easily overlooked, yet how revealing! How reassuring of the fact "God is not mocked!"

The New York Central terminal speaks to the eye in a modern tongue, with, however, French an accent. Its façade suggests a portal, reminding the beholder

that a railway station is in a very literal sense a city gate placed just as appropriately in the centre of the municipality as in ancient times it was placed in the circuit of the outer walls.

Neither edifice will stand the acid test of Mr. Sullivan's formula, that a building is an organism and should follow the law of organisms, which decrees that the form must everywhere follow and express the function, the function determining and creating its appropriate form. Here are two eminent examples of "arranged" architecture. Before organic architecture can come into being our inchoate national life must itself become organic. Arranged architecture, of the sort we see everywhere, despite its falsity is a true expression of the conditions which gave it birth.



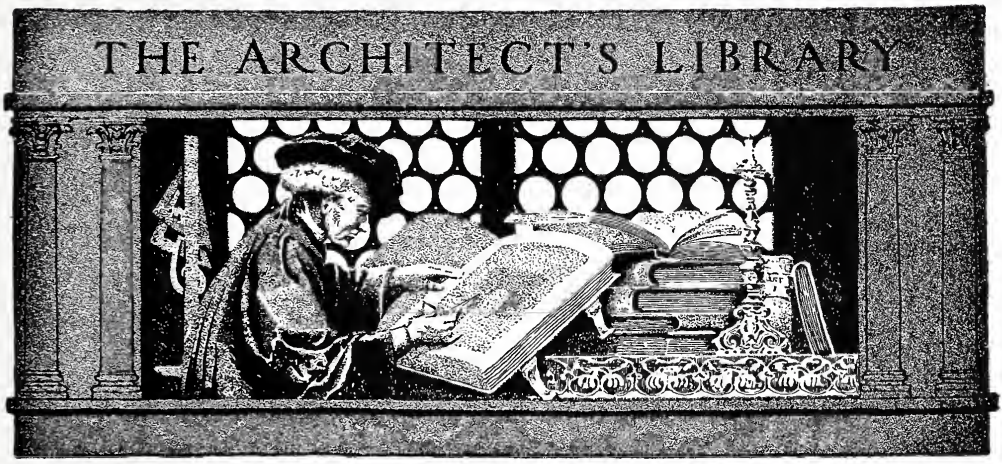
WILLIAMSBURGH BRIDGE, EAST RIVER, NEW YORK.

The grandeur of Rome, the splendor of Paris—what just and adequate expression do they give of modern American life? Then shall we find in our great hotels, say, such expression? Truly they represent, in the phrase of Henry James, "a realized ideal" and a study of them should reveal that ideal. From such a study we can only conclude that it is life without effort or responsibility, with every physical need luxuriously gratified. But these hotels neverthless represent democracy, it may be urged, for the reason that everyone may there buy board and lodging and mercenary service if he has the price. The exceeding greatness of that price, however, makes of it a badge of nobility which converts these democratic hostelries into feudal castles, more inaccessible to the Long Denied than as though entered by a drawbridge and surrounded by a moat.

We need not even glance at the churches, for the tides of our spiritual life flow no longer in full volume through their portals; neither may the colleges long detain us, for, architecturally considered, they give forth a confusion of tongues which has its analogue in the confusion of ideas in the collective academic head.

Is our search for some sign of democracy ended, and is it vain? No; democracy exists in the secret heart of the people—all the people—but it is a thing so new, so strange, so secret and sacred—the ideal of brotherhood—that it is unuttered yet in time and space. It is a thing born not with the Declaration of Independence, but only yesterday, with the call to a new Crusade. The National Army is its cradle, and it is nurtured wherever communities unite to serve the sacred cause.

Although menaced by the bloody sword of Imperialism in Europe, it perhaps stands in no less danger from the secret poison of graft and greed and treachery here at home. But it is a spiritual birth, and therefore it cannot perish, but will live to write itself on space in terms of beauty such as the world has never known.



BOOKS ON COLONIAL ARCHITECTURE

By RICHARD F. BACH

Curator, School of Architecture, Columbia University

A SERIES of group or classified reviews and bibliographies of the literature of Colonial architecture printed within recent months in The Architectural Record has called forth sufficient interest to warrant the preparation of the present paper, which will bring the subject to date as of the close of the year 1917. That year saw the addition of but seven noteworthy works to the Colonial list. Had it been a year of peace instead a year of world-consuming conflagration, we should probably be able to count up about twice this number of titles. Of the seven volumes not one is composed of measured drawings. The nearest approach to this type of plates is seen in the highly praiseworthy new edition of excerpts from hoary Asher Benjamin's fine books, edited by Aymar Embury II, who selected plates and text and produced them under the title: *Asher Benjamin,** a reprint of "The *Country Builder's Assistant," "The Rudiments of Architecture," "The American Builder's Companion," "The Practical House Carpenter,"* and *"Practice of Architecture"* (Quarto, pp. x+169, plates numbered according to originals but following regular pagination in reprint. New York; The Architectural Book Publishing Co.; 1917. $12.50). This is an authoritative piece of work and an excellent reproduction of one of the chief sources from which Colonial carpenters so readily and so successfully drew their inspiration. Of all the compilations of plates, called "Companion," "Treasury," "Guide," "Assistant," "Jewel," and what not in the way of inane titles, the well studied collections of drawings by Asher Benjamin became the most acceptable and, it seems to us, the most reliable.

Of the other six volumes of the year, two are devoted to Philadelphia, one to Virginia, one to Charleston, South Carolina, and one to Colonial silverware.

A thoroughly readable book, admirable as to text and illustrations and of excellent typography, is Horace Mather Lippincott's *Early Philadelphia, Its People, Life and Progress.* (Octavo; pp. 340,

*See also detailed notice in The Architectural Record for August, 1917, page 181.

with 120 ills. Philadelphia; The J. B. Lippincott Company; 1917. $6.) No better versed authority could have been chosen to indite the account of William Penn's "Holy Experiment" (though there is little enough of its holiness in evidence now). The volume fittingly begins with an account of the city's founder; the historical background of growth is then followed through under chapter headings such as "the early settlers and their city" or "churches and their people," while more definite description appears under specific headings such as "the market place" or "squares and parks" or "the old taverns." Various organizations like the Library Company, The Athenaeum, The Franklin Printing Company, The Carpenters' Company, and the like are granted individual chapters, in each case with ample illustrative material from the buildings which they occupied. An excellent total effect is obtained from these careful studies, an effect in which the life and people are shown faithfully in relation to their architectural environment. The buildings do not, to be sure, receive specific attention as monuments of architecture—assuredly not all deserve such record; but a picture of the old city as an aggregate of its buildings is brought before us and thus the architectural congeries of good, bad and indifferent is impressed upon us. The author does not, fortunately, fall into the error of bootless adulation of the past that so many writers favor and which has been the marring feature of many a book of this character. For the architect a descriptive book like Mr. Lippincott's is an essential, for he can glean from its pages a wealth of interpretation and feeling and lively reality, qualities almost invariably ignored, and necessarily so, in works maintaining a strictly architectural viewpoint. To link up the buildings with their historical background and to give characters and organizations mentioned a local habitation and a name, the present volume is profusely illustrated with clear reproductions, some from photographs of structures in their present state and some from old prints.

Much the same may be said of the author's method in *Old Roads Out of Philadelphia,* by John T. Faris (Octavo; pp. 19-327, with 117 ills., and a map. Philadelphia; The J. B. Lippincott Co.; 1917. $4), a book with a local name but with an interest covering a circle with a radius of almost fifty miles from its centre in Philadelphia. Some one has compared the old roads out of Philadelphia to the ribs of a lady's fan; if an open fan is laid on the map of Philadelphia and its surrounding country, the end ribs may be made to conform with the Delaware and Schuylkill, while the remaining ribs will correspond after a fashion to the ten great old roads, several of which date from the later years of the seventeenth century. Along every one of these roads a deal of American history has been built—here an old tavern with traditions of distinguished guests or dark plottings; there an ancient mansion built possibly during the period that Penn visited his Province. The roads treated are the King's Highway to Wilmington, the Baltimore Turnpike, the West Chester Turnpike, the Lancaster Turnpike, the Gulph Road, the old Germantown Road to Bethlehem, the Ridge Road, the Old York Road, and the road to Bristol and Trenton. The author writes in a delightful fashion from an abundant private store of knowledge; he loves the roads whether traversing them afoot, on horseback, in motor or trolley. We rather suspect he likes to walk, as walking gives the complete satisfaction of a perfect hunt into the past.

This volume is also favored with profuse illustrations. Its character is such as to appeal not only to interest, but also to curiosity, based upon a natural desire to see what there is just a little further along each road. In addition, whether it falls into the hands of a careless believer in the present or into the hands of an unbeliever—in terms of our Colonial heritage—the book will serve a missionary purpose. We recommend it above all to architects in search of an outlet for their *wanderlust* on this side of the water and, other things being equal, we hope they will be prompted to make most of their journeyings on these roads out of Philadelphia on foot.

II.

Two other books falling distinctly within the Colonial time, providing excellent collateral reading, but laying no emphasis whatever upon the architectural aspect of their respective territories, are: *Colonial Virginia, Its People and Customs* (Octavo; pp. xvi + 376, with 93 ills. Philadelphia; The J. B. Lippincott Company; 1917. $6), by Mary Newton Stanard, and *Memories of Old Salem* (Octavo; pp. 341, illus. New York; Moffat, Yard and Company; 1917. $3.50), by Mary Harrod Northend. Both are valuable works for the architect, for the reason that they provide him with a parallel avenue of reading, not narrowly professional, yet amply illustrated with buildings, the majority of which he knows, and replete with references to the character and use of such structures. Much of the misunderstanding of Colonial architecture that produced the aberrations, which—gratefully we record it—are at last counted safely among the things of the past, was due to a narrow regard for forms alone, devoid of environment and circumstances, dead and without the enlivening influence of the Colonial life that made them realities. We cannot too often emphasize this need in the architect's reading, the need for collateral interest, as setting off the strictly professional interest and giving it a substance culled from the one time environment of the forms he uses for his inspiration. A cold use of Gothic detail, with no understanding of the life of the Middle Ages, must remain as unfeeling as an icicle; no more can a use of Colonial forms today be successful if the designer has not learned some interpretative appreciation by looking behind those forms for the facts of life of which they were the mere externals.

Colonial Virginia is not concerned with public events, but, as its subtitle suggests, with the private and daily lives of people, and the procession of men, women and children of every walk of life; these troop through its pages and fill it with movement and color. The great mass of facts on which the book is based are not to be found in any connected history; they have been gathered from Colonial diaries, newspapers, letters—both social and business—wills, inventories, shop-bills, and other documents throwing light on private and personal life. Nor has tradition contributed to its pages—every statement made is a matter of record.

An introductory chapter picturing the first settlers struggling for existence at Jamestown is followed by a brief discussion of the character and classes of those haughtily termed the "Later Emigrants." Next, the reader is taken into homes—from log cabin to mansion—and shown their furniture, decoration, table-service and even their kitchen utensils. He sees the Colonists eating, drinking and merrymaking; observes their clothes and jewels and their manners in the family and toward guests. Later, he sees them traveling about the country on horseback or in coach-and-four, and with them he goes to church and to the first theatre not only in Virginia, but in America. The sentimental age is not neglected. Here is Jefferson sighing in vain for his "Belinda," and Washington for a succession of charmers; while less distinguished Virginians are caught in the act of equally picturesque love making, and the Governor and Council solemnly enact a law against flirting. The great number of books and book-owners, the taste for music and pictures in the Colony, and at that early day, will surprise many readers. The closing chapter is given to the quaint funeral customs and epitaphs of the Colonist. *Colonial Virginia* is profusely illustrated with interior and exterior views of homes, furniture, silver, book-plates and other characteristic objects.

In *Memories of Old Salem* Miss Northend ably maintains the standard of quality set by her earlier books, already reviewed in these columns; her present book, however, is not written with so close an eye to architectural treatment. In fact, its subtitle, "drawn from the letters of a great-grandmother," would seem to preclude such a point of view. The illustrations, however, are excellent for our purpose as students of Colonial art, being well selected and carefully made. The book provides an enticing history of a city that was at one time the greatest

commercial centre in the United States —namely, at the time when Samuel McIntire wrought in wood as the foremost of our early craftsmen.

III.

Charleston is fortunate in having such interpreters as the writers and illustrators of *The Dwelling Houses of Charleston, South Carolina,* by Alice R. Huger Smith and D. E. Huger Smith, illustrated from drawings by Alice R. Huger Smith, photographs and architectural drawings by Albert Simons (Octavo; pp. 387, with 128 illus. Philadelphia; the J. B. Lippincott Co.; 1917). There is a distinct feeling in some quarters that Charleston is the aristocrat of American cities. This feeling is deepened in examining the illustrations of the fine old houses and their stately interiors as presented in this volume by both camera and pencil. Though the illustrations are numerous and large there has been plenty of space for a text written in an engaging manner, describing the buildings, the people and the life of today and yesterday. There is material for the genealogist, for the artist and for the historian; and there is in addition plentiful material for the architect, for there are plans and sections and details, profile sections of moldings and woodwork, not to mention a quantity of excellent photographs.

All things considered, we are inclined to consider this volume on *The Dwelling Houses of Charleston* one of the best books that we have seen thus far in the Colonial field, chiefly for the reason that it brings together in such effective combination an excellent text, photographs and measured drawings and characteristic sketches, and in such manner as to provide an appeal both for the layman and for the architectural practitioner. But few books have yet been issued which make the effort to maintain this double appeal, and to the credit of authors and publishers be it written that the former desired and the latter saw fit to sanction the publication of such a volume with this double purpose in view. It is our hope that many more volumes in the Colonial field will be granted a similar treatment. Painstaking illustration matter has never yet ruined a book and plans and measured drawings will cease to be inscrutable to the layman in the same degree in which their constant appearance in his books renders them increasingly familiar to his eye.

IV.

But one volume treating of the minor arts of the Colonies saw the light during 1917; this was Francis Hill Bigelow's *Historic Silver of the Colonies and Its Makers* (Octavo; pp. 26; and 476, ills. New York; The Macmillan Company; 1917. $6). An exhaustive and profusely illustrated work whose value is self evident. In no less than forty-eight different classes the manifold objects of Colonial craftsmanship in silver are treated and with a thoroughness excelled only by E. Alfred Jones in *The Old Silver of American Churches,* reviewed in these pages some months ago, which has, as its title plainly shows, a much smaller territory to cover. Mr. Bigelow was associated with Mr. Jones in the preparation of the quarto on American church silver, a volume inaccessible for the average purse, and wisely planned to bring out a lower priced book for the humble consumption of aspiring lovers of old time American art in a field thus far inadequately edited. In his undertaking Mr. Bigelow has in most painstaking fashion sought to fill a need in the literature of Colonial art; Colonial silver as a general subject has long demanded just such a work as this to give it its appropriate exposition and interpretation. The book will be accepted promptly as a standard work of reference; in general get-up it has surely excelled Mr. J. H. Buck's excellent book on *Old Plate,* noticed in this place some time ago. There is provided a good bibliography of some twenty-five titles; there are 325 illustrations; and there is a detailed general index as well as a separate index to silversmiths. We would welcome similarly authoritative publications covering other branches of the minor arts of our formative time; Mr. Bigelow's book has set a high standard for such future publications.

V.

In connection with some of our earlier papers in this series we neglected to include the following items which are worthy of brief individual notice.

Specific mention should be made, for instance, of two pamphlets by David King on the Redwood Library at Newport, Rhode Island (for titles see bibliography in next month's Architectural Record). These brochures give the only separately published text matter in regard to this building; they were issued in 1860 and 1876.

We should also note a pamphlet on the Preservation and Restoration of City Hall, Hartford, Conn. (Octavo brochure; pp. 16, ill.), published as bulletin No. 6 of the publications of the Municipal Art Society of that city and illustrated with careful line drawings.

Unfortunately we were not apprised in due time of the existence of an excellent volume on Colonial furniture, edited by William Rotch Ware, who also edited that master work in the Colonial field, *The Georgian Period*. This special volume is entitled: *Seats of the Colonists and Other Furnishings,* illustrated largely with measured drawings by H. C. Dunham. (Folio; pp. 24+28 pl. New York; American Architect Company; 1904. $5). It consists first of three text sections; a short glossary of terms used in furniture and furnishings by William B. Bigelow; a historical introduction by Horace C. Dunham, and an article on Chippendale by R. Davis Benn. These articles are all illustrated and are followed by twenty-eight plates, of which about half show two chairs, each in half-tone, while the remainder show measured drawings of still other examples. The plates of measured drawings are treated in excellent fashion—in one corner appears a line perspective; in another a half elevation, with horizontal sections through upright members; a third quarter of the plate shows a vertical section through a front to back median line; and the remainder is occupied by a plan—all of which in drawings of chairs implies, of course, a careful indication of contour and curvature, in showing treatment of splats and stretchers and other component members and methods of their construction. We heartily commend plates of this sort, because, to the mind of the practitioner, they really "get somewhere"; photographs are always instructive, but when combined with measured drawings they may be said to approximate the ideal of representation in instructive plates.

At the Avery Architectural Library at Columbia University, we have come upon a group of four elevations, seven plans and six section drawings of the Capitol of Massachusetts, showing the enlargement erected in 1853 and 1854 by Gridley J. F. Bryant, architect; these are all bound in a small octavo volume, without text, and their origin is unknown, although they could probably be traced with some difficulty in the archives of the Boston State House. These drawings do not themselves fall within the Colonial time, but they so intimately concern the modifications and fate of the first great Colonial building that it was found feasible to include mention of them here.

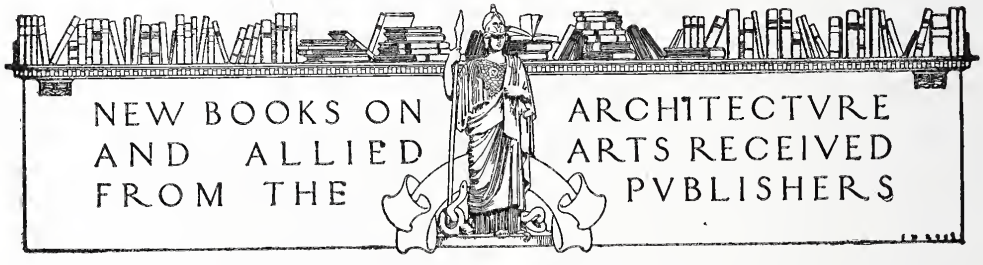
A book of considerable interest, but of little direct application from the architectural point of view, is that edited by Swepson Earle and Percy G. Skirven, entitled: *Maryland's Colonial Eastern Shore, Historical Sketches of Counties and of Some Notable Structures.* (Crown Octavo; pp. 19; and 204, ills. Baltimore; Munder Thomsen Press; 1916. $3.50.) The text is subdivided into eight accounts covering as many counties in the general region embraced in the title, with a separate section for Washington College. In each county nine or ten places of interest are discussed. All are illustrated in very clear but very small cuts, of which many are, no doubt, the only published photographs of the buildings shown. Nine authors collaborated in the production; the text is good, but, as usual in books of this character, plans are not in evidence.

VI.

The periodicals have shown a decided improvement as to the character of the Colonial material they have published in 1917. The first fervor which led many popular papers to publish "chatty" articles in the usual anemic style of

writing has largely worn itself out by sheer predominance of supply over demand. On the other hand, the professional architectural papers, especially *The Architectural Record, Architecture, The Architectural Forum* and occasionally *The American Architect,* have continued to publish excellent articles accompanied by measured drawings; and it should be noted that the character of these drawings improves as time goes on. Among other things we note with pleasure the introduction of small photographs as part of the sheet on which measured details appear, a practice the value of which we have emphasized and encouraged again and again in earlier articles in this series. It is safe to say that, so far as Colonial material is concerned, the periodicals have found their pace, and that their future contributions to the literature of Colonial art, and architecture in particular, will be of high quality.

There is one periodical publication which deserves especial mention; this is the *Bulletin of the Society of the Preservation of New England Antiquities.* So far as we know this is the only organization which has set itself such a specific purpose of preserving monuments in a prescribed region. This body has to date restored eight old time residences and has been instrumental in casting much light upon the architecture of Colonial times still extant in the New England district. The *Bulletin* of this society contains many references to Colonial buildings and other types of art; all of these are too brief to warrant individual inclusion in these notices, but, as an aggregate, they are of great importance and not to be overlooked in any account of the literature of Colonial art.



A Study of the Heat Transmission of Building Materials. By A. C. Willard and L. C. Lichty. Ills. 60 p., 6 by 9 inches. Bulletin No. 102, Engineering Experiment Station. Published by the University of Illinois. Urbana.

The Meaning of Architecture. An Essay in Constructive Criticism. By Irving K. Pond, C.E., A.M. (Hon.), Architect Member of the National Institute of Arts and Letters, Fellow and Past President of the American Institute of Architects. Many ills., 226 p., 5½ by 8 inches. Boston: Marshall Jones Company. $2.00 net.

War Housing Problems in America. A Symposium on War Housing Held Under the Auspices of the National Housing Association, February 15, 1918, Philadelphia. 141 p., 9¼ by 6 inches. New York City: National Housing Association.

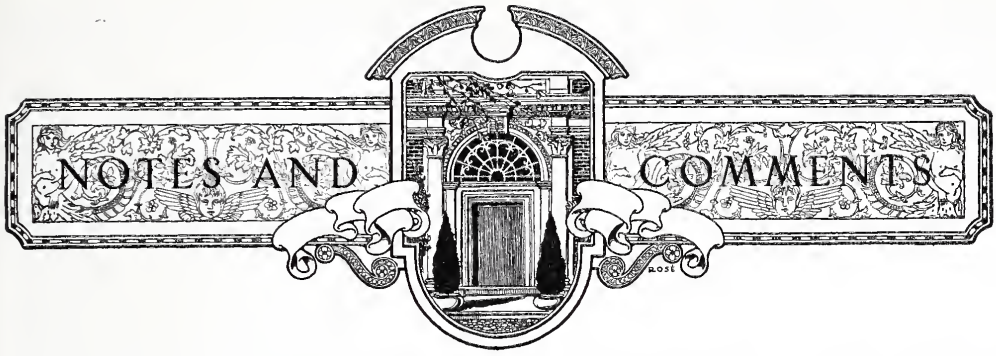
Annual Report of the Department of City Transit of the City of Philadelphia for the year ending December 31, 1916. Many ills. and maps, 350 p., 9½ by 6 inches. Issued by the City of Philadelphia.

Mechanics of the Household. A Course of Study Devoted to Domestic Machinery and Household Mechanical Appliances. By E. S. Keene, Dean of Mechanic Arts, North Dakota Agricultural College. 391 p., many ills., 8½ by 6 inches. New York: The McGraw-Hill Book Company, Inc. London: Hill Publishing Co., Ltd. $2.50 net.

Fairmount Park Art Association—Forty-sixth Annual Report of the Board of Trustees. Proceedings of the Forty-sixth Annual Meeting, and List of the Members. Ills., 55 p., 9 by 6 inches. Philadelphia: The John C. Winston Co.

American Academy in Rome—Annual Report, 1916-1917. 100 p., 7 by 10 inches. Offices of the Academy: The Octagon, Washington, D. C.

The Storage of Bituminous Coal. By H. H. Stoeck, Professor of Mining Engineering. Ills., 192 p., 6 by 9 inches. Circular No. 6, Engineering Experiment Station. Published by the University of Illinois, Urbana.



Henry Janeway Hardenbergh.

The span of life of Henry Janeway Hardenbergh covers the full period from the Greek Revival style of the ugly forties through the still uglier Gothic fifties and the gradually improving succeeding decades to the time of the most up to the minute skyscraper innovation. He erected structures in practically every accepted building manner in accordance with the precepts of the time, but always without losing that individuality which made him one of our foremost practitioners in his field. He at no time surrendered this original quality of personal interpretation, regardless of the character of either function or design in his buildings.

Hardenbergh was born at the old Dutch town of New Brunswick, N. J., in 1847. His antecedents were Dutch, his first American ancestor having emigrated from Amsterdam at about 1644. Jacob Rutsen Hardenbergh, his great-grandfather, was one of the founders of Rutgers College, first established as Queen's College, in 1785, and in that year became its first president.

The architectural training of Hardenbergh began in the office of Detlef Lienau, an architect of some slight reputation, at about 1865, and a person of thoroughly German training and disposition, pleasingly modified by his professional tutelage under Henri Labrouste. Lienau never subscribed entirely to Labrouste's favoritism for the neo-grec, and, despite the French master's evident apostacy of this classic purism, succeeded nevertheless in developing a strong personal style, unfortunately not sufficiently well represented by actual work extant in New York. While the German's stylistic tendencies may have had no great influence on young Hardenbergh's growth, the latter profited in no small degree by the methods of his teacher, learing a careful modulation of an inherited thoroughness—a quality easily overdone in design—and a certain well defined structural sense of design—a quality conducive to organic and reasonable interpretation of exterior motives. The inexorable relationship between the mechanical interior constructive problem and the inspirational exterior design problems appears in all of Hardenbergh's subsequent work as a leading quality. In all cases he has construed his drafting board work as the necessary method of making intelligible his intentions as to the building, rather than the building as a verbatim execution of so many carefully indicated drawings.

It was difficult, of course, for young Hardenbergh, when his apprenticeship at Lienau's was over, to escape the dry vogue of the Gothic Revival. So in so-called Victorian Gothic we find him erecting his first buildings at New Brunswick, a grammar school in 1870 and a chapel in 1873. The latter seems to suggest something of the German Gothic, as is seen in the articulation of its triple porch, and in its buttress treatment. The meagre indications of Hardenbergh's predominant features of restful and direct or straightforward design make themselves felt, and these qualities in 1873 were distinctly at variance with the restlessness of current practice.

The decade of 1883 was variously employed in work not of remarkable character and chiefly of value as the necessary phase which the young designer invariably needs in order to "find himself." In 1884, however, the Dakota apartment house at Central Park West and Seventy-second street at once placed him in the forefront of American designers. Although a building of French transition design, as some few details seem to indicate, its general conception is quite free and no doubt other decidedly alien

motives could be discovered. The Dakota apartment house was the first structure of such height along the Park on that side, and the average citizen may be imagined as commenting unfavorably upon its value to that now so poorly treated municipal "lung"; the success of the design is not to be gainsaid and its value to the Park is obvious. The architect's problem was one that appeals to all designers so long as they deal with a *projet* only, but which assumes dangerous proportions when the conditions of the real problem have to be faced. The real estate venture was at the bottom of the tall apartment building, as it was at the bottom of the office building, and the skill of architects, notably of Hardenbergh, made these ventures sightly and in no small number of instances really assured their success. The introduction of the elevator and of fireproof construction methods rendered the high building a mechanical possibility and contributed both convenience and safety. Many other apartment structures followed, all hoping for a similar architectural effect, and many hoping for a good design as a means of drawing them out of a financial slough of despond from the investment point of view.

Hardenbergh's first commercial building, the Western Union Telegraph Company's building in Broad street, was also erected in 1883. Various other office buildings and warehouses serve to continue the story for another decade, when an emphatic success is seen in the Netherlands Renaissance design of the John Wolfe Building at Maiden Lane and William street. The solution of this problem of an irregular site by a series of truncated angles until the upper stories of the narrowest face of the many pointed plan ascend to a dominant motive on a flat façade is worthy of study, for it demonstrates the working out of a feasible harmony between irregularities of plan and regularities of design. This is the first building of the skyscraper class within Hardenbergh's practice, a steel frame building with the customary masking of visibly or apparently structural materials of design.

Numerous country houses, small and large, and many city dwellings, chiefly of the "stoop" type, fell to the lot of Hardenbergh, as part of the grist that came to the mill; but not as the chief object of his architectural ambitions, for in such minor motives he could not write the burden of his message, which—as later history shows—was to be expressed in terms of tall buildings of the apartment house and hotel type, to which the Dakota, the Van Corlear, and the Adelaide in the eighties gave the initial impetus.

Hardenbergh's greatest accomplishments were undoubtedly the fine hostelries with which his name will be associated closely when the story of American architecture is finally written. In the old Waldorf Hotel, dated 1891, he favored the German Renaissance, working out a picturesque composition in which even minor motives disregard all symmetry, with the result that each motive demands a separate study if its value is to be taken at par. A certain eclecticism even prompted the admixture of an amount of Italian detail in the design. The Waldorf, for the first time in hotel design, demonstrated that interior decoration is the architect's field as thoroughly as exterior design.

In 1896, both the Manhattan Hotel and the Astor addition to the old Waldorf were undertaken. The former is a more conventional tall building type, but again served to carry out the architect's feeling in interior decoration. The latter is in a sense a revision of the old Waldorf design, with the great improvement that it was regularized. It would seem that the breathless growth of New York was not sensed well enough in the Waldorf and there was room for picturesqueness which devoured space. In the Astor the need for interior accommodations had made itself felt strongly enough in five years' time to demand a regularization of design which would make the interior a more definite quantity to reckon with in the future. The same German Renaissance style was, of course, adhered to, but most of the detail keeps close to simple classic forms. Cupolas and dormers naturally had to retain the Teutonic character, likewise the three-story order on the Thirty-fourth street façade. It is interesting to conjecture what might have been the trend of such a picturesque design in the hands of a designer less imbued with the fundamental verities of restraint and good judgment.

The great success of these hotels was completely overshadowed by Hardenbergh's achievement in the New Willard at Washington, the Raleigh at the same place, the New Windsor at Montreal, and especially by the Copley Plaza at Boston and the Plaza Hotel in New York. In these he demonstrated the same reserve and sensible interpretation which seemed to be one of his endowed faculties, for his

most immature work indicates them as well as his finest hotel. To us, for whom buildings like the Biltmore, the Commodore and Pennsylvania are the order of the day, the intrinsic value of the fine buildings which Hardenbergh gave New York and other cities is too easily passed over; as a matter of fact, Hardenbergh was the pioneer hotel builder, the first to develop the esthetic problem of hotel design and the mechanical problem of hotel planning for safety and convenience. His findings in many avenues of study bearing upon this general problem are now the accepted factors of any hotel conception. It is well for American architecture that a mind as well managed and far-seeing and a pencil as sure and restrained as Hardenbergh's guided this phase of its growth. His work is a definite contribution to our national style development, and his efforts served in no small degree in the establishment of the great hegemony of the most distinctive American building type.

Henry Janeway Hardenbergh was a founder of the American Fine Arts Society, a past president of the Architectural League of New York, a distinguished member of the American Institute of Architects and of its New York Chapter. His death on March 13, at the age of nearly seventy-two years, removed one of the most august and inspiring figures that American architecture has produced.

RICHARD F. BACH.

A Folding Bungalow.

Mr. Adam Int-Hout, of Chicago, is a chemist, but his chief claim to fame, to hear him tell it, rests upon a small "folding bungalow" designed and built by himself, and in which he and his family live with as much comfort as the average dweller in a three-bathroom apartment.

Mr. Int-Hout touches a button or a lever, and, presto! the partitions of his cabinets, bookcases, dining room table and other articles of furniture appear or disappear; in this folding bungalow probably more of the essentials of fine living are compressed into a smaller space than in any similar structure ever built.

The bungalow is twenty-six feet square; has a living porch eight by ten feet in front, and a wide entrance porch and porch seat. It stands in the middle of a fifty-foot lot and is shaded by two immense arching elm trees. The house is divided into living room, kitchen, bathroom, downstairs bedroom and a furnace closet. There is no sign of a dining room; nevertheless such a room exists and you are likely to find yourself in it when you least expect it.

The easiest way to understand it is to imagine that you have been invited to dinner at the Int-Houts. After you have been welcomed, the hostess, leaving you in the living room, excuses herself to go into the kitchen—for no maids upset the scheme of harmonious living that this family is working out.

Perhaps the first thing that catches your attention is the stairway next to the entrance door, and you notice the clever way in which the balustrade forms a set of book shelves running clear down to the floor. Next to this is the closet for outdoor wraps, then the opening of the small hall leading to the bedroom where you took your things off, and next there is a grille which extends from floor to ceiling just in the middle of the long wall space that forms the back part of the living room.

This grille seems to serve no particular purpose, and while you are wondering what it is for, your eye travels along to some water-colors hanging on the next six feet of wall space. This partition and a swinging door, which leads to the kitchen, seem to complete all that there is to be seen along the back wall. But just then Mrs. Int-Hout appears and hooks the kitchen door back and you immediately begin to rub your eyes. Heavens! is the wall really moving? Your hostess stands there calmly with her hand on the door casement, seeming barely to touch it, and yet the whole piece of wall is turning round into the kitchen. You know this because the pictures are going into the kitchen as fast as they can, while with equal celerity a small hanging china cabinet comes into view on what was the kitchen side of the partition. Nor is this all, for along with the china cabinet comes a dining room table, in all the splendor of china and glass and snowy napery and tempting viands. The table appears to be fast to the wall until Mrs. Int-Hout gives it a touch with her hand, whereupon it takes its position exactly in the centre of that half of the living room.

A half-mile at least of needless walking has been avoided by setting the table in the kitchen where everything is close at hand, and then moving it by a touch right



THE FOLDING BUNGALOW.

into the presence of the hungry and expectant guest. When the meal is near its end and dessert is mentioned, you naturally expect the hostess to go into the kitchen after it. Instead she simply reaches out toward the china cabinet, and there on an open shelf beneath it reposes the last course of the meal. This shelf also serves to receive the plates and other dishes when they are removed.

But perhaps the best part of it all is that one can sit at the table and talk as long as one likes without worrying about getting the table cleared off quickly for fear it will look untidy. Or if the door bell rings and other visitors appear, the table can be sent off simply by pushing it over to the partition and starting it. The wall does the rest, and the table is cleared with all the dishes right beside the sink, ready to be washed.

The most important part of the home from the man's point of view is the furnace. It is in a closet in the centre of the room, and the front wall of this is formed by the grille spoken of.

A school furnace, protected by a drum, stands in the closet, which is directly in the centre of the house. Cold air holes have been drilled along the bottom of the drum to the height of fourteen inches. As the furnace must send heat in every direction, the side partitions of the closet have been cut off above and below, fourteen inches from the floor and the same distance from the ceiling; the front partition is an open grille clear to the floor.

By this ingenious arrangement an absolute suction for drawing cold air in is effected. Its success as the basis of a heating and ventilating scheme is shown by the fact that the entire house was kept warm all winter on less than five tons of coal.

One of the worst features of caring for the furnace, the carrying of coal, has been eliminated by another clever arrangement. There is back of the furnace a two-foot space which runs between the kitchen and the bathroom. Here are the gas meter, the water meter, a medicine chest for the bathroom, and a chute which is built to answer the purpose of a stationary coal closet. It holds two tons, and has the outside window just high enough so that the coal may be thrown into it directly from the delivery wagon. The slope adjusts the gravity so exactly that the coal always falls to the door of the chute, which is directly opposite the door of the furnace. All you have to do is to turn around and take out a shovelful as you would from a coal-box.

The kitchen has a stationary laundry



THE GRILLE ON THE LEFT HIDES THE FURNACE.



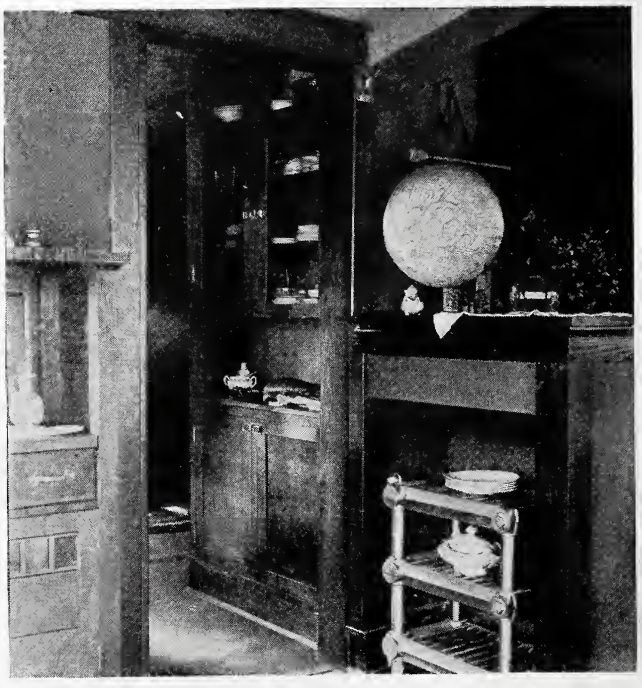
THE DINING ROOM TABLE COMING IN FROM THE KITCHEN.

tub of porcelain, the top of which forms the drip-board of the sink. In the back wall is a kitchen cabinet, with drawers and swinging doors in the lower part and shelves with glass doors in the upper part. As this cabinet is built into the back wall, it would curtail the light ordinarily. This is avoided by glassing both the front and the back, an arrangement which not only lets the light through, but also cuts down the heat, as it is only necessary to open one of the small outside panes to make the cabinet into a cooler.

There is an upper room, fifteen and a half feet square, with north and south glass doors opening on sleeping porches, thus making it cool and totally unlike the ordinary attic room.

This folding bungalow cost about $2,000 to build, and it was completed in six weeks, the outside wall being of stucco set on a foundation of concrete.

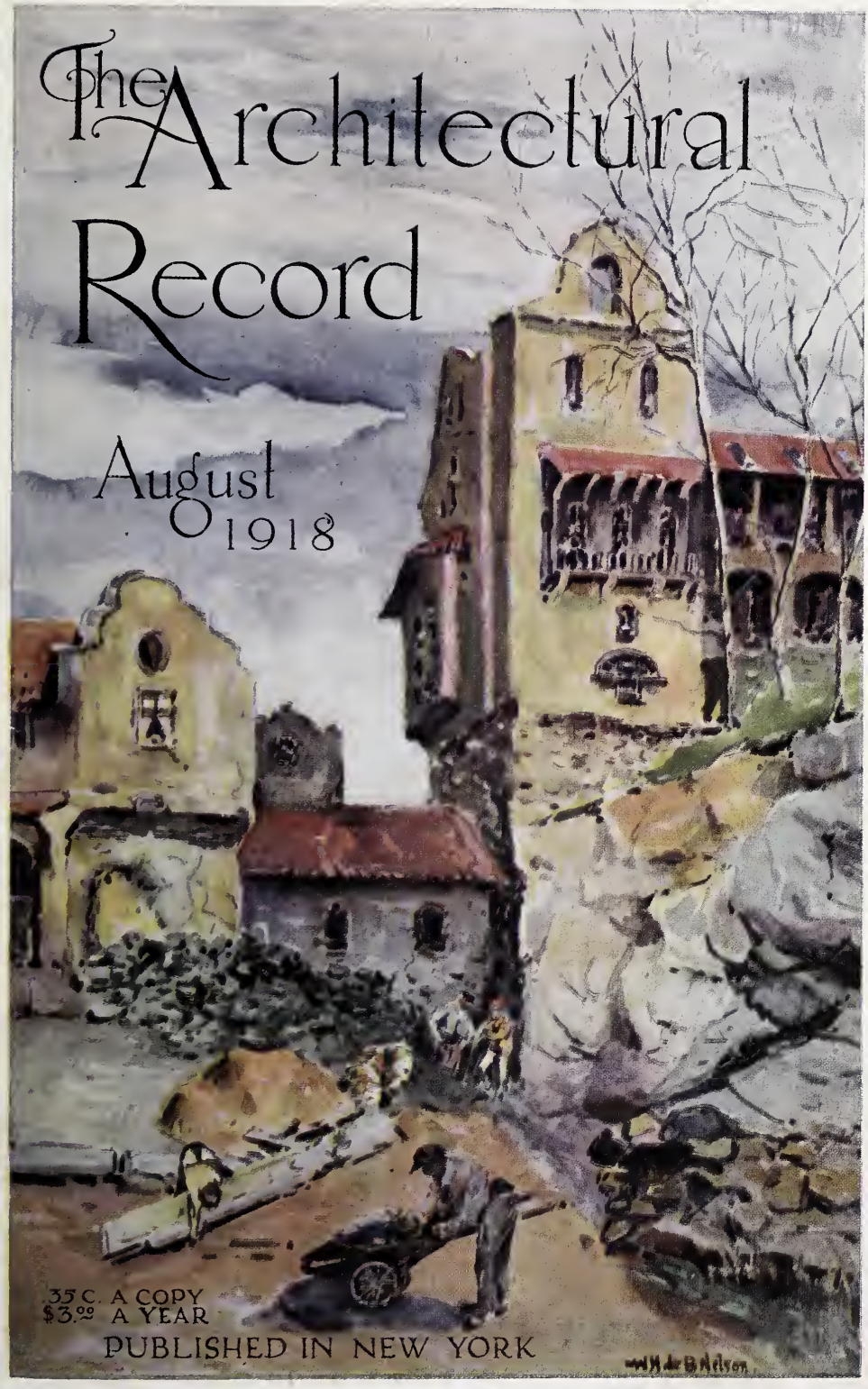
ROBERT H. MOULTON.



A RADIATOR IN A NICHE SERVES ALSO AS A PLATE WARMER.

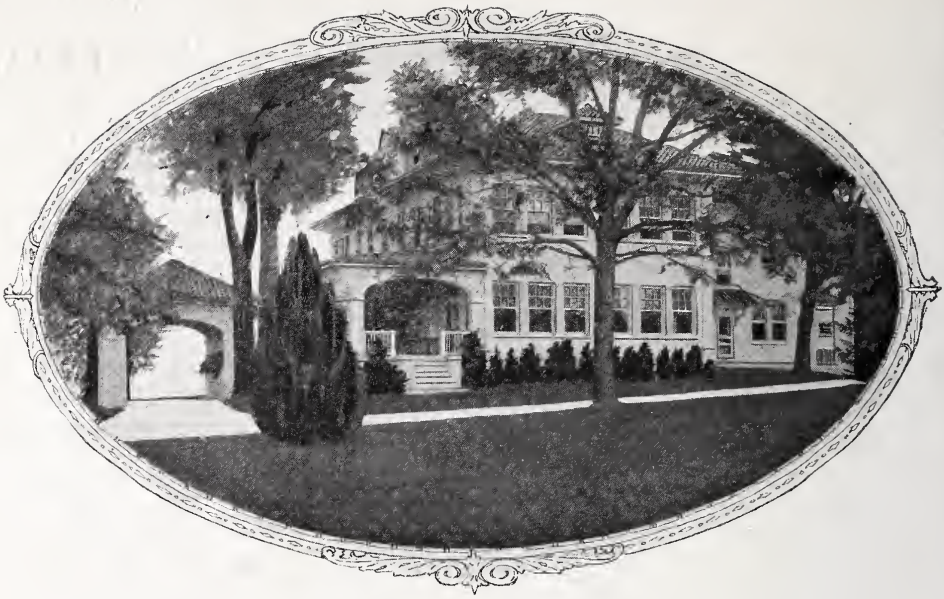
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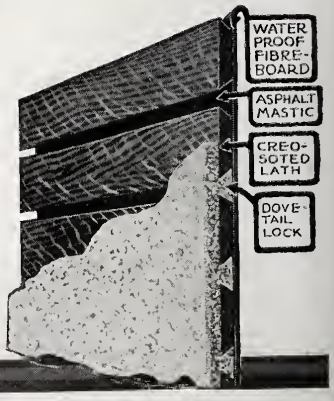
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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY
THE ARCHITECTURAL RECORD COMPANY
115-119 WEST FORTIETH STREET, NEW YORK
F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.



MAIN ENTRANCE—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO. CASS GILBERT, ARCHITECT.

THE ARCHITECTVRAL RECORD

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THE DVDLEY PETER ALLEN MEMORIAL ART BVILDING OBERLIN, OHIO

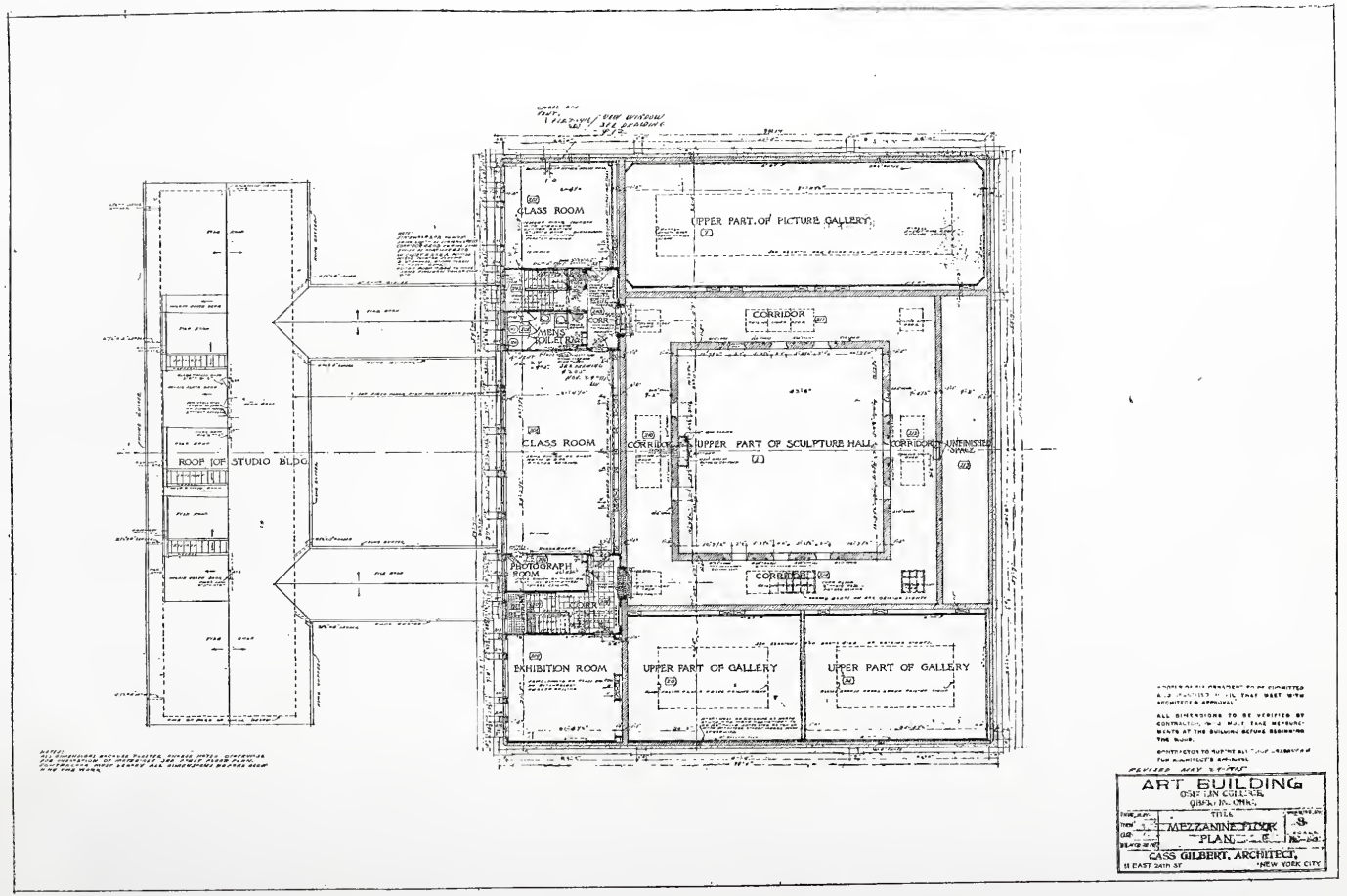
BY I. T. FRARY

AN encouraging sign in the development of art appreciation in this country is the rapidly increasing number of art museums which are coming into existence. Not only are they found in the large cities, but the smaller towns are testifying in surprising numbers to the hold which art is securing upon the American people. Even more gratifying than the increase in numbers is the tendency to make of these institutions not mere repositories for the hoarding of art works, but to develop them as inspirational centres having a definite, practical function to perform in spreading the gospel of art. Courses of lectures, traveling exhibitions, special classes for school children and students in institutions of higher learning, temporary loans to neighboring libraries and schools—these are a few of the numerous activities which are humanizing the museums and bringing them into vital touch with the communities in which they are located.

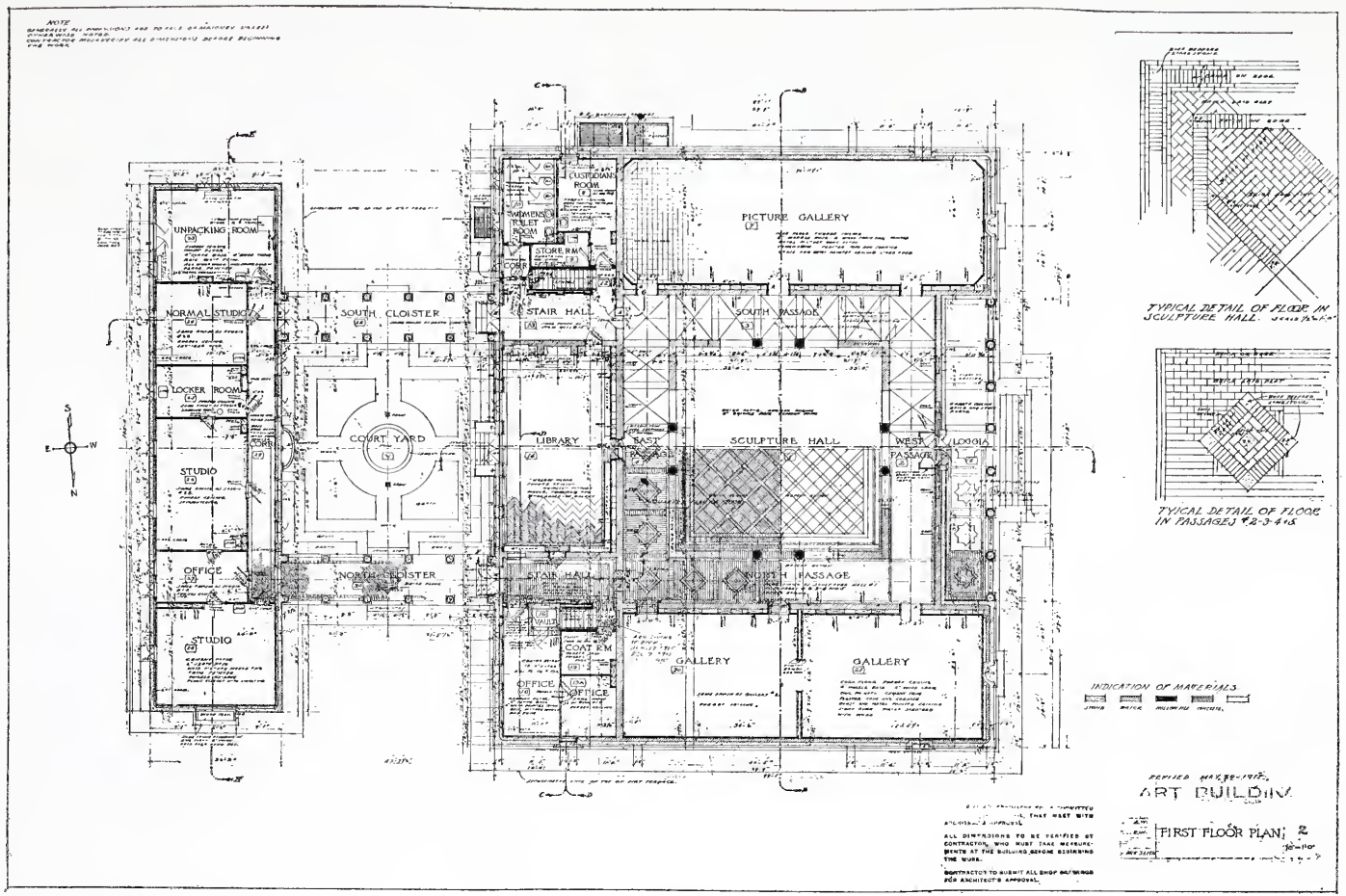
Especially interesting are these possibilities when the museum is established in proximity to or in connection with a college or university, for there is thus brought about the added chance of broadening its field so that it may become a factor in the institution's curriculum.

Such a relation has been brought about in the town of Oberlin, Ohio, by the erection of the Dudley Peter Allen Memorial Art Building. This structure forms a part of a general scheme of architectural development and rebuilding which is being carried out by the authorities of Oberlin College under the supervision of Cass Gilbert.

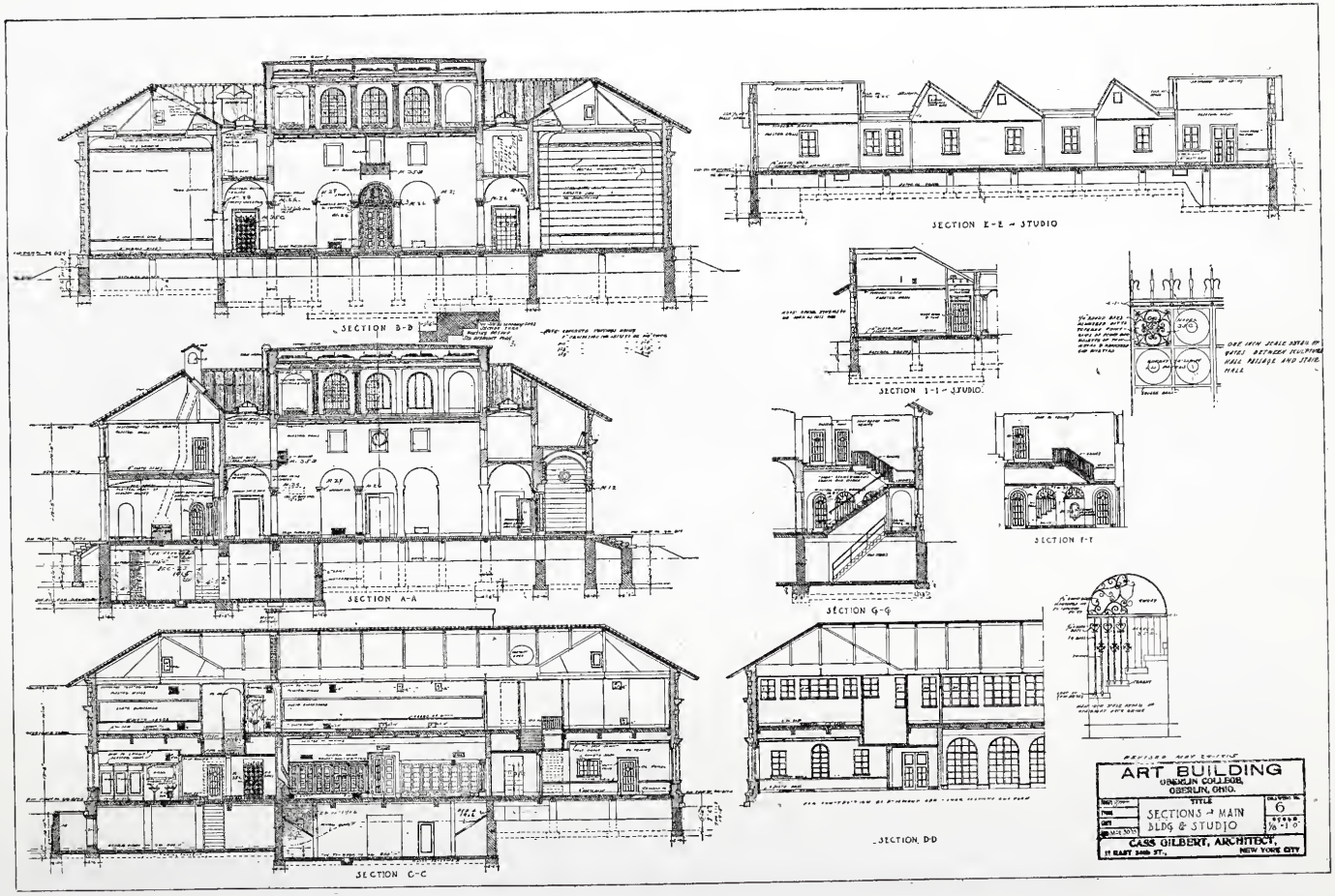
Mr. Gilbert has taken as the keynote of his program the architectural styles of Northern Italy and Southern France,



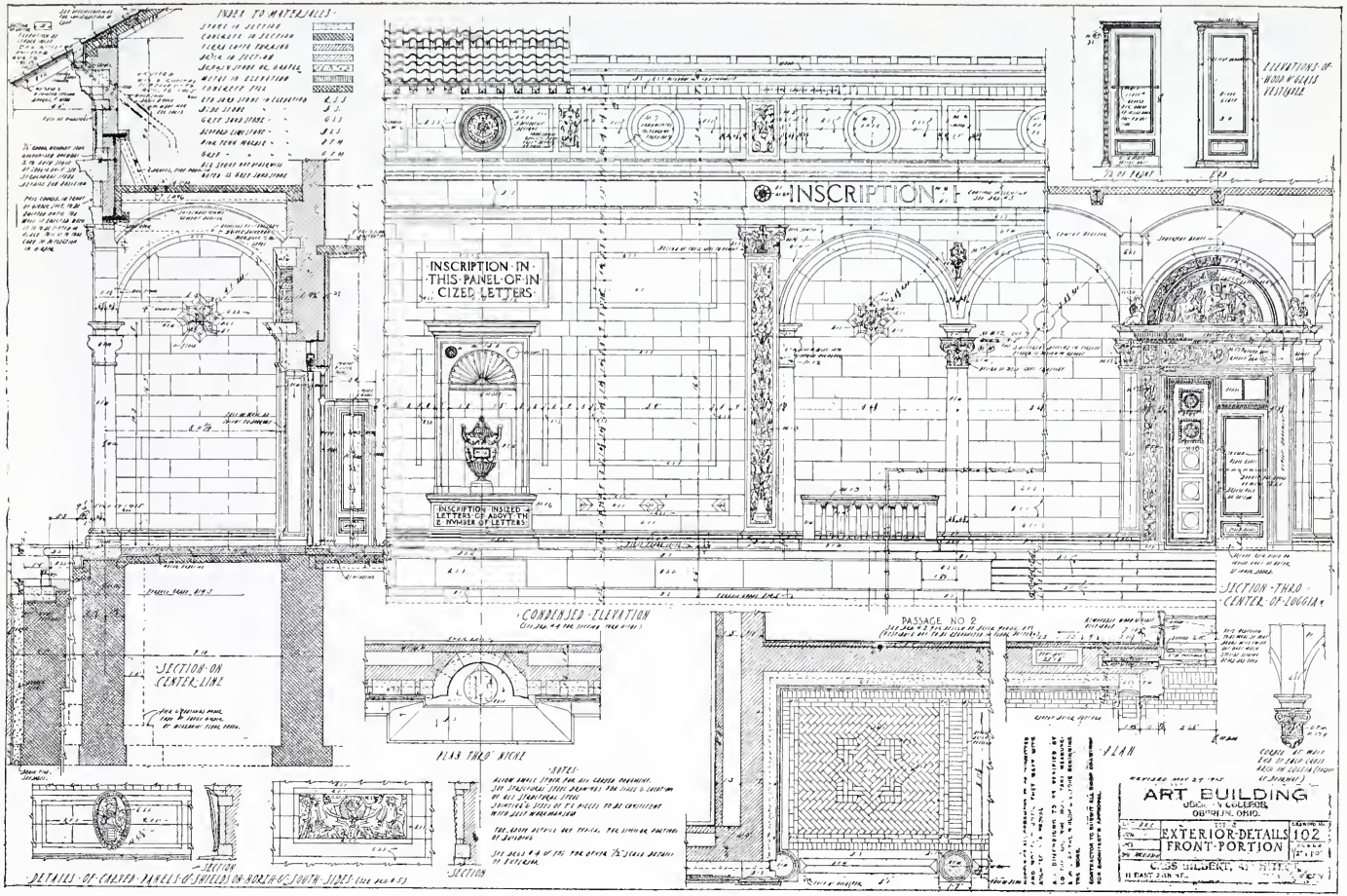
PLAN OF MEZZANINE FLOOR—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO. CASS GILBERT, ARCHITECT.



PLAN OF FIRST FLOOR—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO. CASS GILBERT, ARCHITECT.



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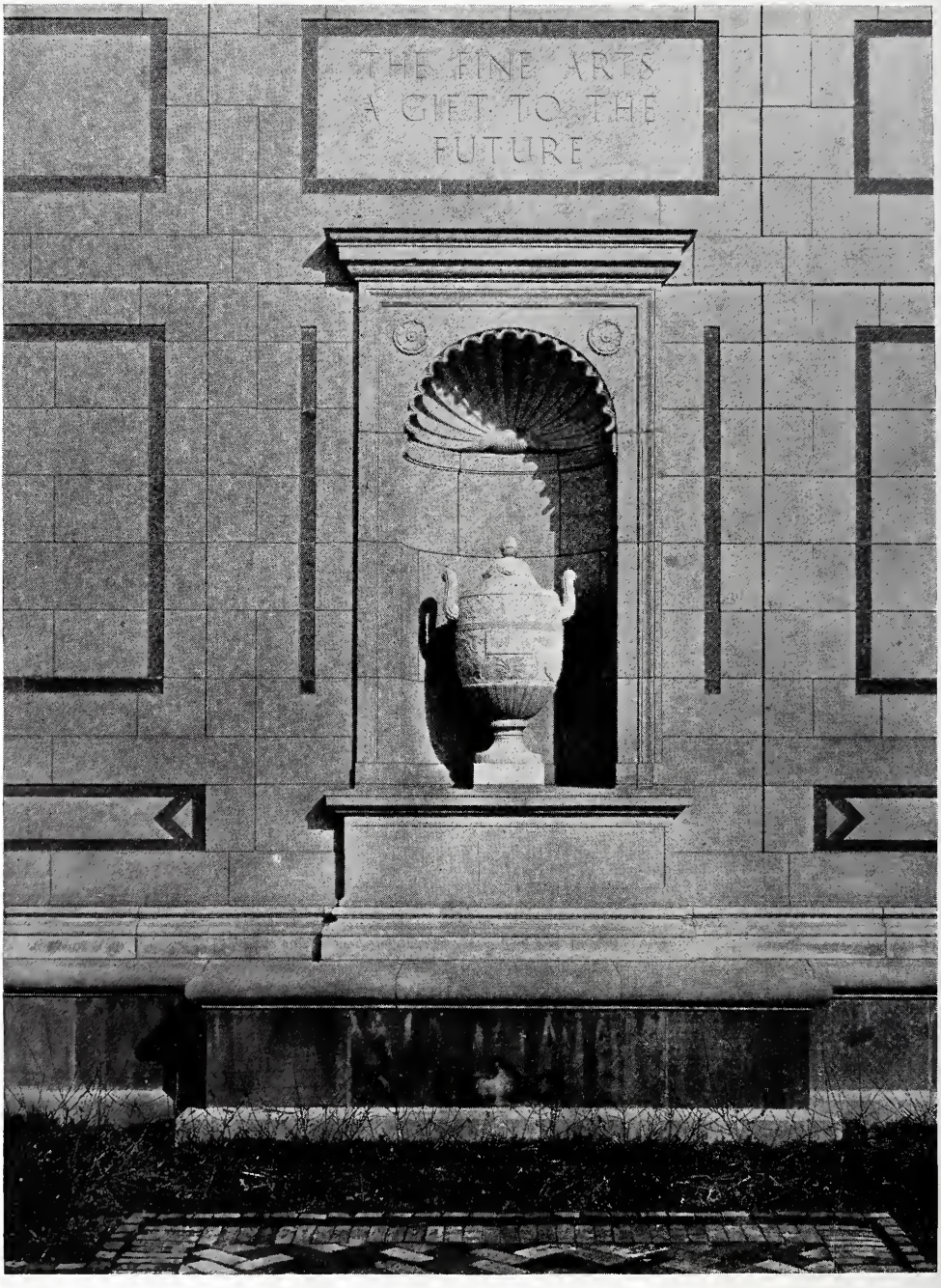
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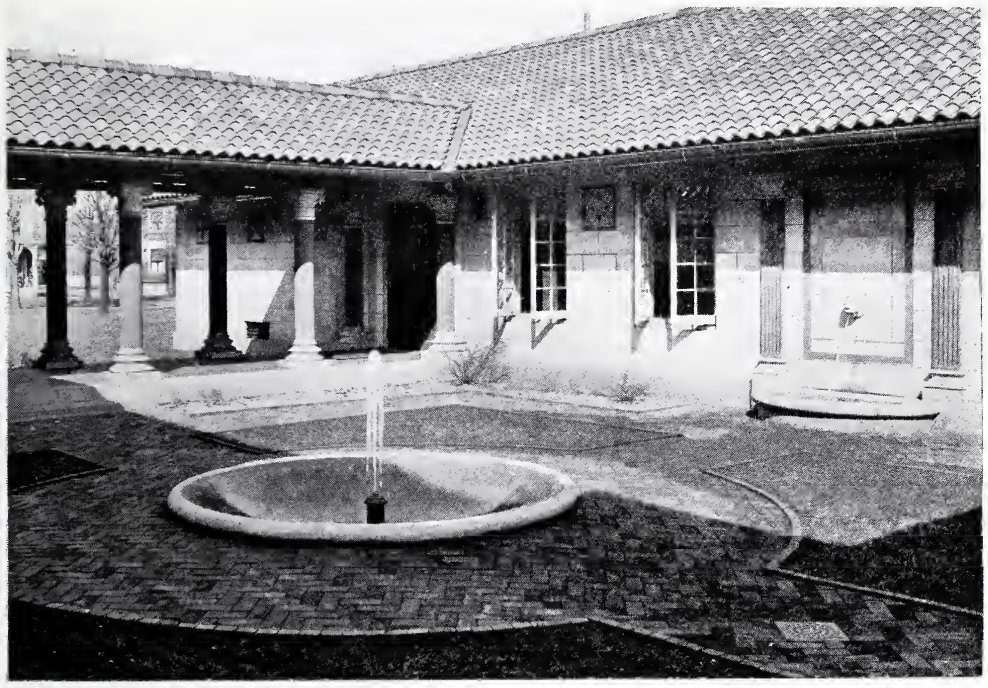
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LOGGIA—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO. CASS GILBERT, ARCHITECT.



DETAIL—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO. CASS GILBERT, ARCHITECT.



FOUNTAIN COURT, LOOKING TOWARD STUDIO BUILDING—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO.
Cass Gilbert, Architect.

the buildings already completed being reminiscent of the work found in these interesting regions.

The Chapel is of unmistakable Romanesque origin; the Administration Building is Byzantine in its details; while the Art Building, which is the especial subject of this article, derives its inspiration from the Renaissance work of the fifteenth century. In the design of this building the entrance loggia and the overhanging roof, with their deep shadows, are dominant features; and the use of polychrome enrichment, which is especially evident in the frieze, adds a distinctive note that is but too seldom made use of by American architects.

The building material used is largely a buff sandstone quarried at the neighboring town of Berea, and with this have been combined bluestone and buff limestone in pilasters and other features, while a brownish-red sandstone outlines the wall panels and forms the basement course. A greater refinement in material is to be found in the loggia columns and balustrade, the main doorway and the vases occupying the two niches in front, all of which are of unpolished pink marble.

The most telling color note is that in the frieze, where, against a brownish-red background of stone, are contrasted the brilliant tones of della Robbia roundels. Some of the shields which enrich these roundels are of a blue, which is too intense to be entirely satisfactory and leads one to wish that the terra cotta were of a texture that would accumulate dust and grime to temper its too ardent hue. Less obtrusive is a replica of a della Robbia lunette, which has been inserted above the main doorway and that proves most satisfying in its setting of pinkish-gray marble. Touches of blue play an important part in the exterior color scheme, and we find the roof shadows emphasized by the rafter ends, which are



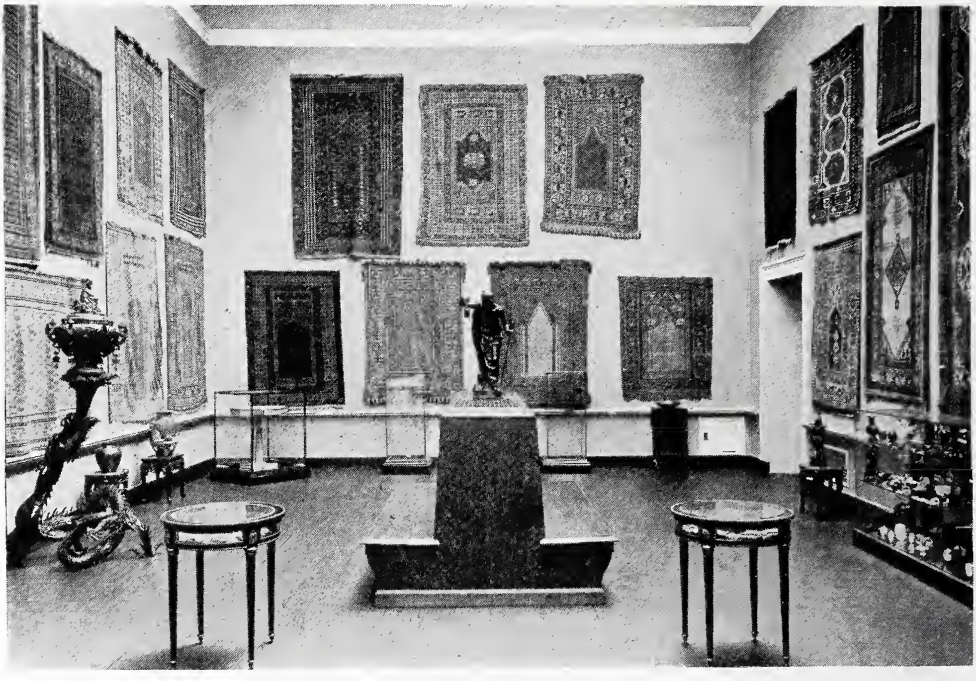
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SCULPTURE HALL—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO.
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GALLERY—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO.
Cass Gilbert, Architect.



GALLERY—DUDLEY PETER ALLEN MEMORIAL ART BUILDING, OBERLIN, OHIO.
Cass Gilbert, Architect.

of a bluish hue. The same emphasis of shadow is found in the loggia, where the vaulting is encrusted with blue mosaic relieved by patterns of gold. The cold colors are not dominant, however; for the brownish-red stone in the walls is but an echo from the red tile of the roof and from the brown bricks used in the walks and in the floor of the loggia. This note has also been carried inside, where brown is found to be the prevailing floor color throughout the building.

The sculpture hall, which is entered directly from the loggia, is carried well up above the rest of the building, so that its light is received from windows opening above the surrounding roofs. A corridor surrounding the hall opens into it on all sides through triple arches, thus producing interesting vistas and adding greatly to the wall space available for placing sculpture. The hall possesses unusual character, now somewhat nullified by the decorative treatment of both walls and ceiling, which is unpleasantly crude and raw, while the crystal ball dangling at the end of an iron chain can hardly be regarded as a happy solution of the lighting problem.

The functions of this building may be considered as twofold: as those of a museum and as those of an art school, for in it is accommodated the entire art department of the College. Twenty or thirty courses of art study are available to the students, and here are provided the necessary classrooms, studios and lecture rooms to care for these varied activities.

The main picture galleries occupy the space on both sides of the sculpture hall and are lighted entirely from the skylights. The administrative department occupies the rear portion of the main floor and includes a library containing about 1,500 volumes, 8,000 or 9,000 photographs and about 20,000 lantern slides. On the second floor, immediately above, are located three classrooms, the largest of which contains equipment for stereopticon lectures. These rooms connect with corridors which surround the sculpture hall and provide valuable exhibition space. The corridors receive their light from skylights and also to some extent from openings into the hall.

At the rear of the main building, connected with it by two open cloisters enclosing a fountain court, is a studio building, where much of the class work is carried on and which also contains the unpacking and shipping room.

The interior of the building has been kept very simple and free from ornamental and decorative effects that might detract from the objects of art which it was built to house. As a result of this restraint, the limited amount of enrichment used has gained materially by contrast. The most beautiful of these features are perhaps the exquisite wrought iron doors which guard the stair halls and the antique doorway, placed at the entrance to the library, which has a memorial inscription carved in the lunette.

The general scheme of reconstruction embarked upon by Oberlin College has, for its ultimate aim, the rescuing of that institution from the chaos of architectural aberrations which have, in the course of a rather aimless growth, sprung into existence without apparent thought, rhyme or reason. Great possibilities are presented by the undertaking, and if it is developed upward from the standard established by the Art Building, America is assured of another monumental group which will do credit to her architecture.



STREET FACADE—HENRY MILLER'S THEATRE. PAUL R. ALLEN & H. CREIGHTON INGALLS, ASSOCIATED ARCHITECTS.

The Henry Miller Theatre New York City

Paul R. Allen & H. Creighton Ingalls Associated Architects

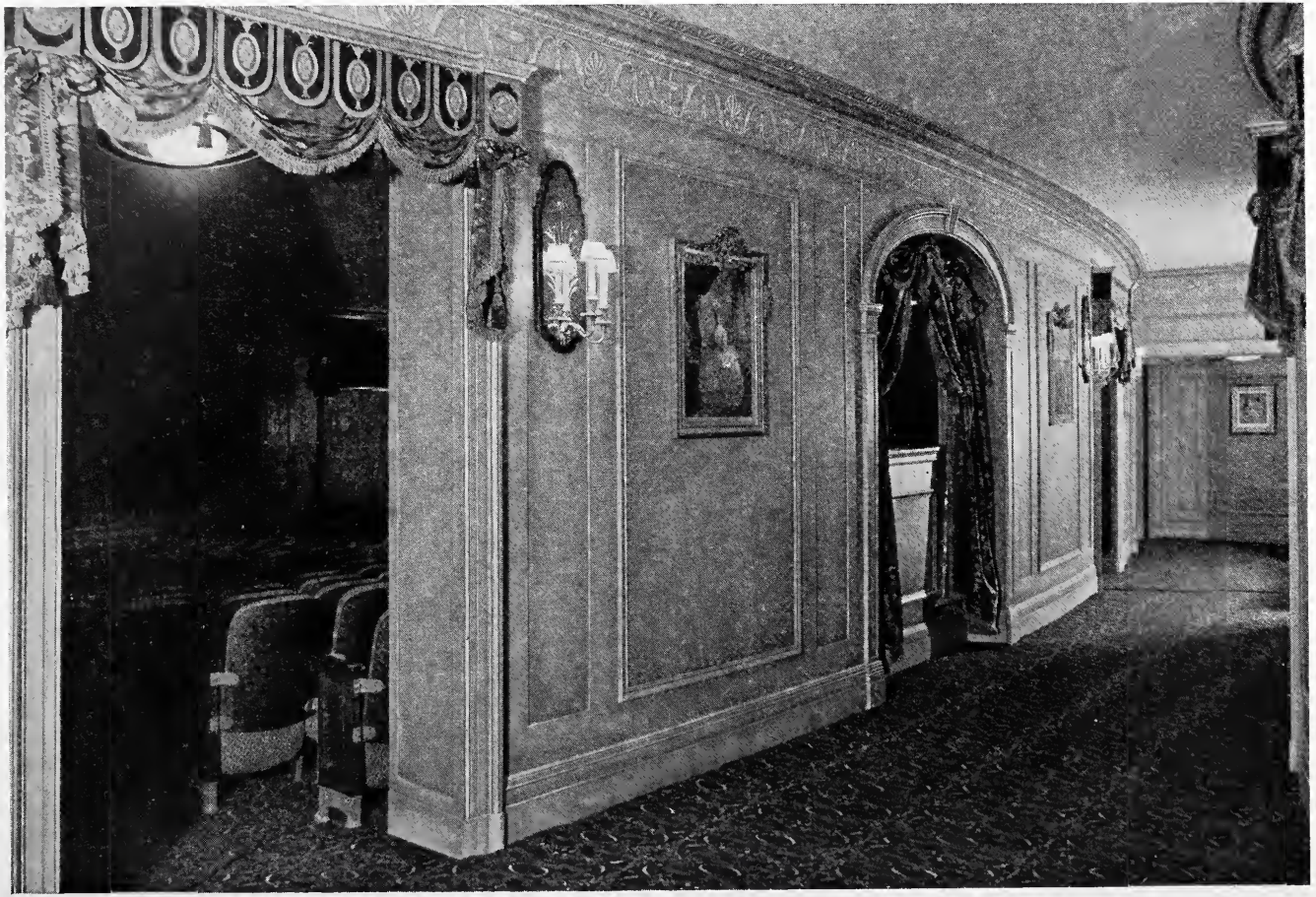
By

Charles Over Cornelius

THE opening, early in April, of Mr. Henry Miller's Theatre in West Forty-third street, is an event of importance, not only to the theatrical world and the theatre-going public, but in an equal degree marks a point of high interest to all who are impressed by an accomplishment of distinction in the art of building beautifully. The man whose cultivation has developed from an education of essential soundness towers above the dead level of human mediocrity by reason of his ability to revivify in his imagination important epochs of history and to relate accurately to them the present in which he lives. In much the same manner this latest addition to the list of New York theatres stands out from the writhing and contorted mass of its commercially designed confreres, recreating as it does in the busy midst of the twentieth century all the charm and polish of that mid-eighteenth century whose life and manners bore so great a similarity to our own.

The art of the drama in England made itself manifest in the very early days of that country's history, and its continuous development and elaboration from the simplest form of miracle and morality plays reached a definite stage in their evolution with the playwrights of the Elizabethan era. Here began the sturdy growth of the English drama as it exists today, yet there is a far cry from the crude productions of the Globe theatre to the perfect finish which a twentieth century audience demands. By the middle of the eighteenth century a form of play construction and a manner of theatrical production had developed, which is so closely akin to the demands of our own taste that the theatrical links are close-forged between that day and this. On the stage of the Theatre Royal in Drury Lane, David Garrick and Peg Woffington defied tradition by their interpretation of the plays of Shakespeare, Sheridan and lesser lights, rousing to enthusiasm a critical public by a finished presentation whose appeal is as valid today as it was in the days of George the Third.

Enough of the inspiration of Drury Lane has been breathed into Henry Miller's theatre to mark it as a lineal descendant in English tradition. The exterior has preserved largely the Georgian character in warm brick and lucent white marble, the scale tending toward the domestic rather than the monumental, and the whole reminiscent of the Adam work contemporary with the Adelphi development and their remodeling of the theatre in Drury Lane. In general one might say that the Adam influence has confined itself to the larger aspects of the façade, the use and treatment of the pedimented end motifs, the proportioning of the main order, the slight reveal and the restraint



FOYER—HENRY MILLER'S THEATRE.
PAUL R. ALLEN & H. CREIGHTON
INGALLS, ASSOCIATED ARCHITECTS.

of the decoration. In other respects and details the spirit is of a slightly earlier type, the central doorway and the arched windows recalling the earlier English Georgian architecture which formed the point of departure for much of our American colonial work.

As the first theatre in the Broadway district erected under the new zoning and theatre laws of New York, the building shows an economical utilization of the spaces at either side of the lot which it was formerly required to leave open for the full depth. This gain in space has made possible a lengthening of the façade and its occupation of the entire frontage. The bays at either end mark the space of these courts, with their broad low arches giving access to the open areas behind. The group of three entrances in the centre admits to the box-office lobby, flanked at right and left by doorways, the first serving as an exit from the balcony, the latter as entrance and exit for the gallery. These two doorways also afford direct access from the street to Mr. Miller's private office and the offices of his staff, respectively. The façade is peculiarly successful in its expression of the interior immediately behind it, the levels of office floor and balcony recalled by the windows appropriately proportioned. The interest of detail is consistent throughout and extends even to the quaint playbill boards with their broken pediments and nicely spaced lettering.

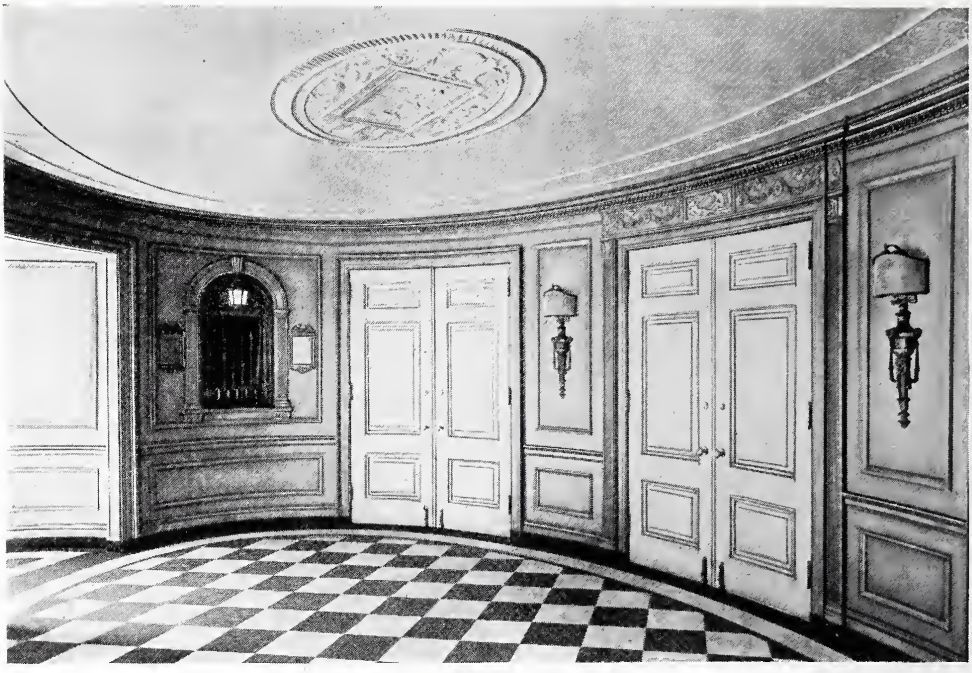
The plan of the building behind this frank façade is thoroughly in keeping with its external expression. The central doors admit directly to the box-office lobby, which, with its oval form and nice proportions, serves as an appetizer for the feast of delicacy spread tastefully within. Three doorways from this lobby give into a shallow foyer that runs across the rear of the orchestra. At either end of this foyer stairs descend to the lounge and at the right ascend to the balcony. The main room of the theatre is entered directly from the foyer, from which it is separated by a wall which replaces the usual draughty opening behind the last row of seats. The remainder of this floor, given over to the stage and its necessarily adjacent service, is planned with an elimination of unnecessary complexity.

That part of the floor below which is designed for the comfort of the public is arranged with much nicety. The stairs leading down from the foyer approach from both sides to the lounge—a spacious room which serves as a meeting place for both men and women. The descent of both stairways is broken near the basement level by roomy landings, from which open the ladies' retiring room and gentlemen's smoking room, each with adjoining toilets and lavatories. The orchestra, which is screened from the view of the audience above, is placed in such a position that its music carries to both lounge and auditorium; while the organ chimes which announce the curtain-rising are similarly arranged.

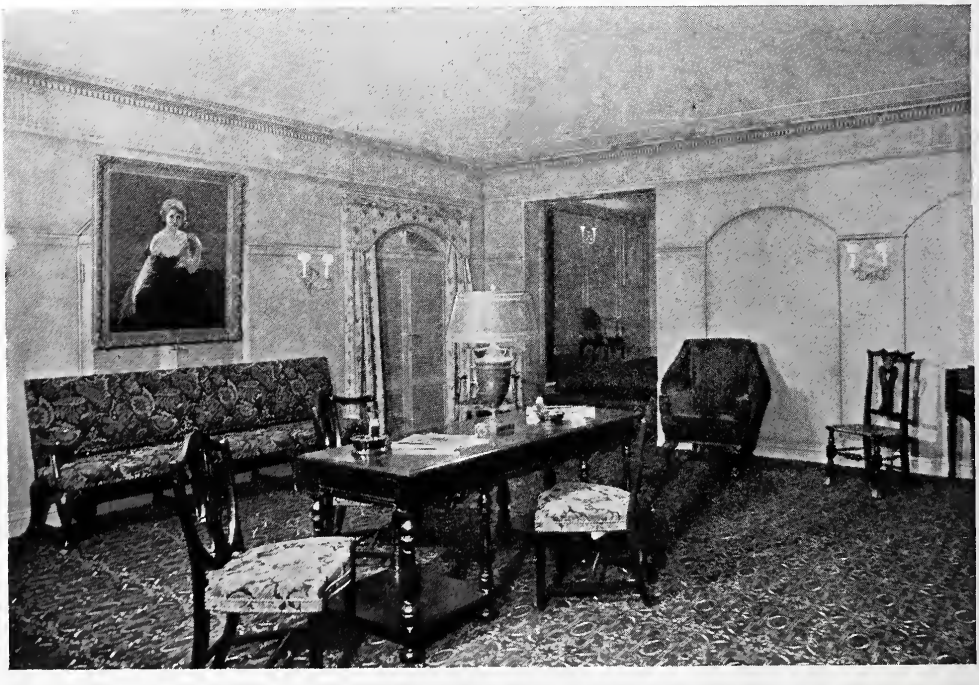
The plan of the balcony floor, which can be studied from the accompanying plan, requires no especial explanation; nor does that of the gallery, which is not illustrated.

If, in the plan, the hand of an experienced master is visible in the solution of so special a problem, no less is it seen in the execution of the plan in the third dimension. That part of the building which is designed for its effect upon the public has been carried out with such a consistency of good taste and an imagination so creative of individual atmosphere, that one instinctively feels a faith in all that one has heard of the positive psychological effect of really good architecture upon its beholder. The accompanying photographs by no means do justice to the building as it is, so much of its charm depending upon the color; but a passing description of the interior taken in conjunction with the photographs may present a facsimile of the building for those who have not seen it.

The decorations of the box-office lobby have been kept very simple, the painted walls being treated with molding and plaster cornice, and relieved by the well-placed wall lights. The floor is of black and white marble bounded by the black of the lower member of the base-board, and the ceiling of molded



BOX OFFICE LOBBY—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.



LOUNGE—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.

plaster is tinted a creamy tone. The only decoration of the trim occurs over the central door. The metal work of the grilles and the fixtures is finished in dull gilt and a grayish black, and the wall color is a warm cream with a mauve glaze, while the doors are the shade of old ivory.

The color chosen for the walls of the foyer is a bright blue, and this has been carried through all of that part of the building which may in general be called the circulation. The blue walls of the foyer are repeated in the stairway which leads from it to the balcony, as well as in those which descend to the lounge. In the lounge itself the color is a bright English green, of much the same value as the blue of the foyer and stairs. This consistency in the main wall color has a unifying effect without any monotony, for much of variety is obtained in the different parts of this circulation group by the use of different types of lighting fixtures and different drapery materials. In the lounge, the silk hangings of alternating rose and yellow stripes are brocaded with small flowers, while the overdoor draperies in the foyer are heavily brocaded silk in deep blue, with a suggestion of chinoiserie in the design. The lighting fixtures, too, differ in each case: in the lounge the side lights have small oval mirror inserts in what might be considered a larger triangle of blue glass, while in the foyer the larger mirrors are surrounded by a gilded frame set with the same blue glass. All of the lights are softly shaded in parchment-colored silk. The carpeting is the same throughout, black with a small-scale design in greens and rose, whose colors will no doubt be softened by a few years' wear. The use of solid color for the walls, enlivened by the contrasting tones of the drapery, is consistent with the period style in which the theatre is carried out, as are the colors themselves—mauve, blue and green, rose amber and blue.

The low-ceiled lounge is an unusually attractive feature and its atmosphere is that of a quiet English drawing-room. The ingle-nook in the centre is a little gem, of which the details in the marble mantelpiece, the brasses of fender, grate, fire irons and tools are brilliant facets. The candelabra here are particularly beautiful, being of onyx and crystal and gilt bronze set with Wedgwood medallions. The wall treatment utilizes arches with very slight reveal, and the plaster cornice—all in the same green—presents typical Adam ornament and the elimination of the architrave. The furniture at present in the room has not been chosen for the place and will eventually be changed for other pieces of greater appropriateness.

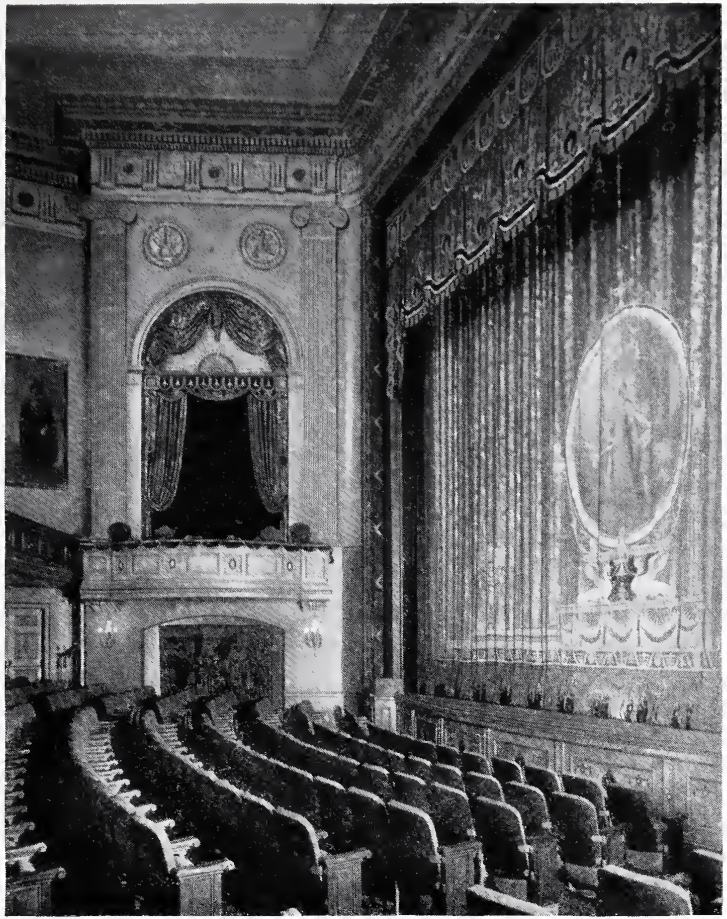
The *raison d'etre* of any theatre must perforce be its main auditorium, and in Henry Miller's theatre this room exhibits a number of features which will mark it as of a new *genre*. In the first place, the tradition has been followed which keeps consciously before it the development of the English theatre from the interior courts of buildings in contradistinction from that of the Latin theatre whose origins lie in the theatres and amphitheatres of Greece and Rome. Of late years this idea has been attenuated with its result in the little theatre movement where the theatre becomes practically a magnified drawing-room. In the theatre under discussion the architects have succeeded in keeping the little theatre atmosphere of intimacy and individuality, while at the same time incorporating into their scheme one of the demands of their client upon which he has stood firm—the presence of a comfortable gallery. Mr. Miller feels that the occupants of this tier have not altogether "gone over" to the moving pictures; for, as in the days of old much of the success of a production came from its reception in the pit, the presence of an enthusiastic gallery means much in the success or failure of a present-day play. Mr. Miller also is averse to the use of first floor boxes, and this has made possible the extremely pleasing form which the second floor boxes have assumed, that of comparatively shallow balconies, whose paneled and decorative fronts carry out the line of the main balcony and tie it strongly into the side



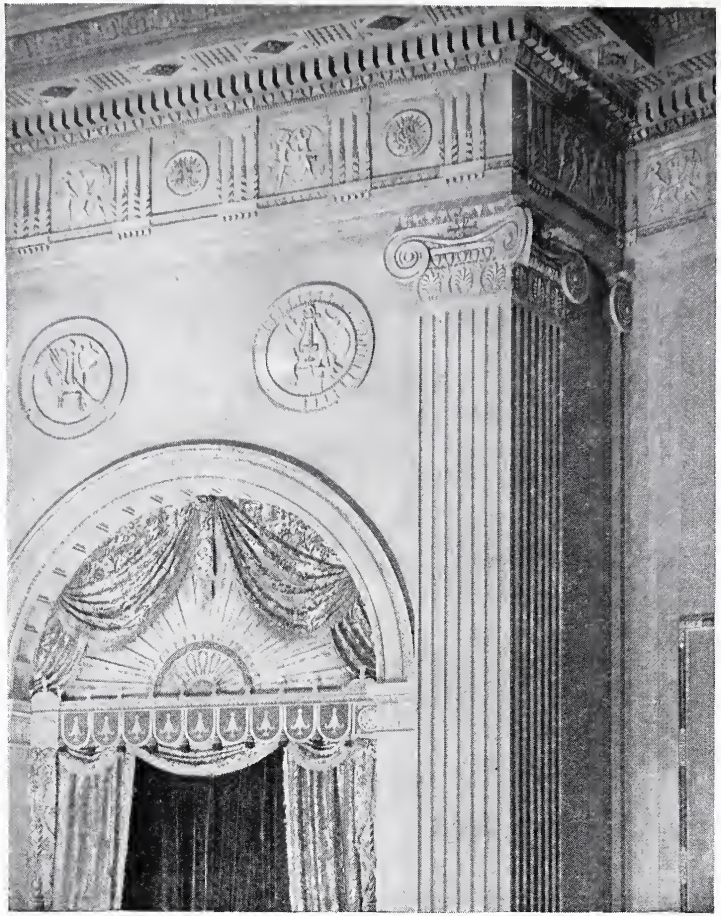
INGLE-NOOK IN LOUNGE—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.



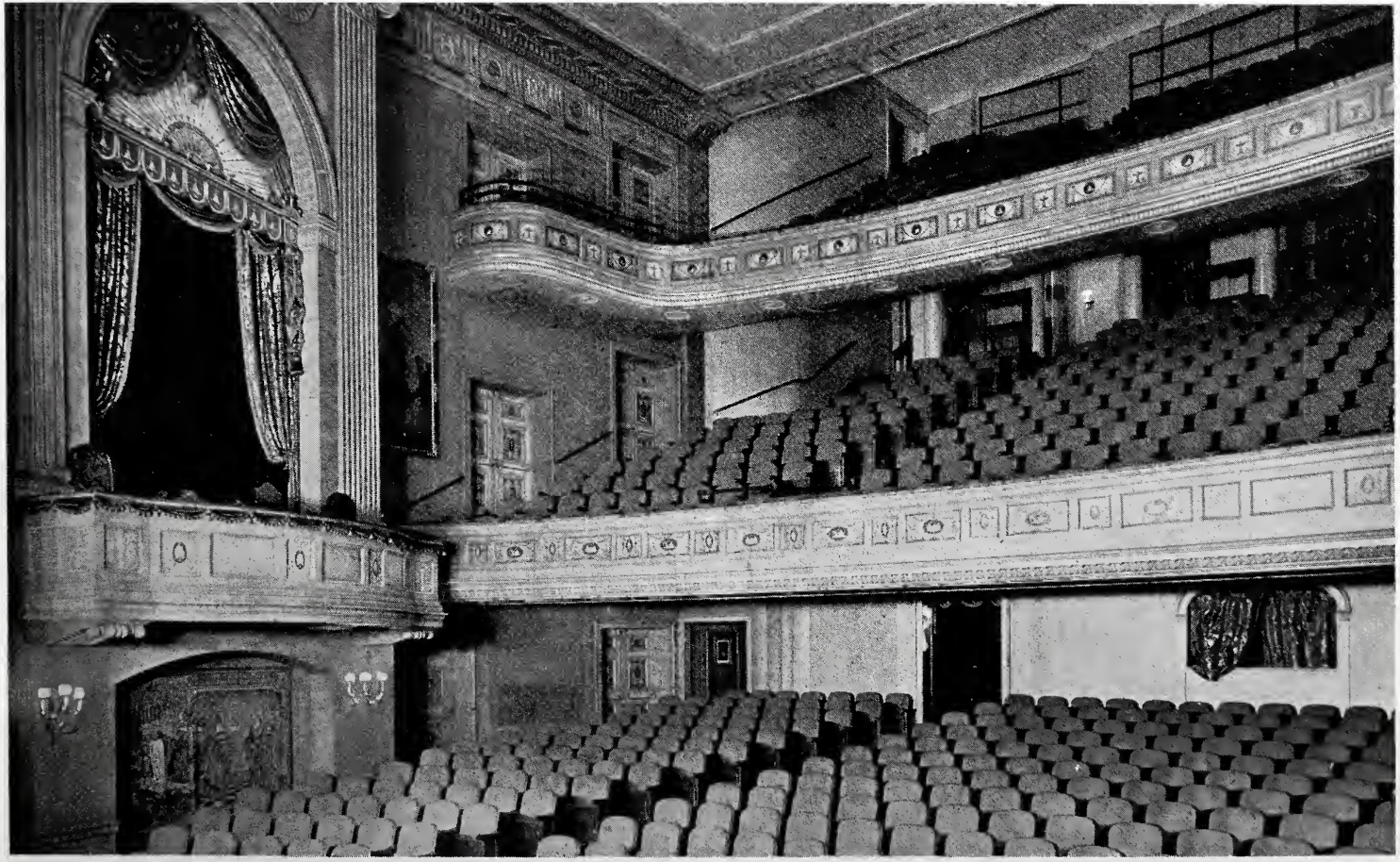
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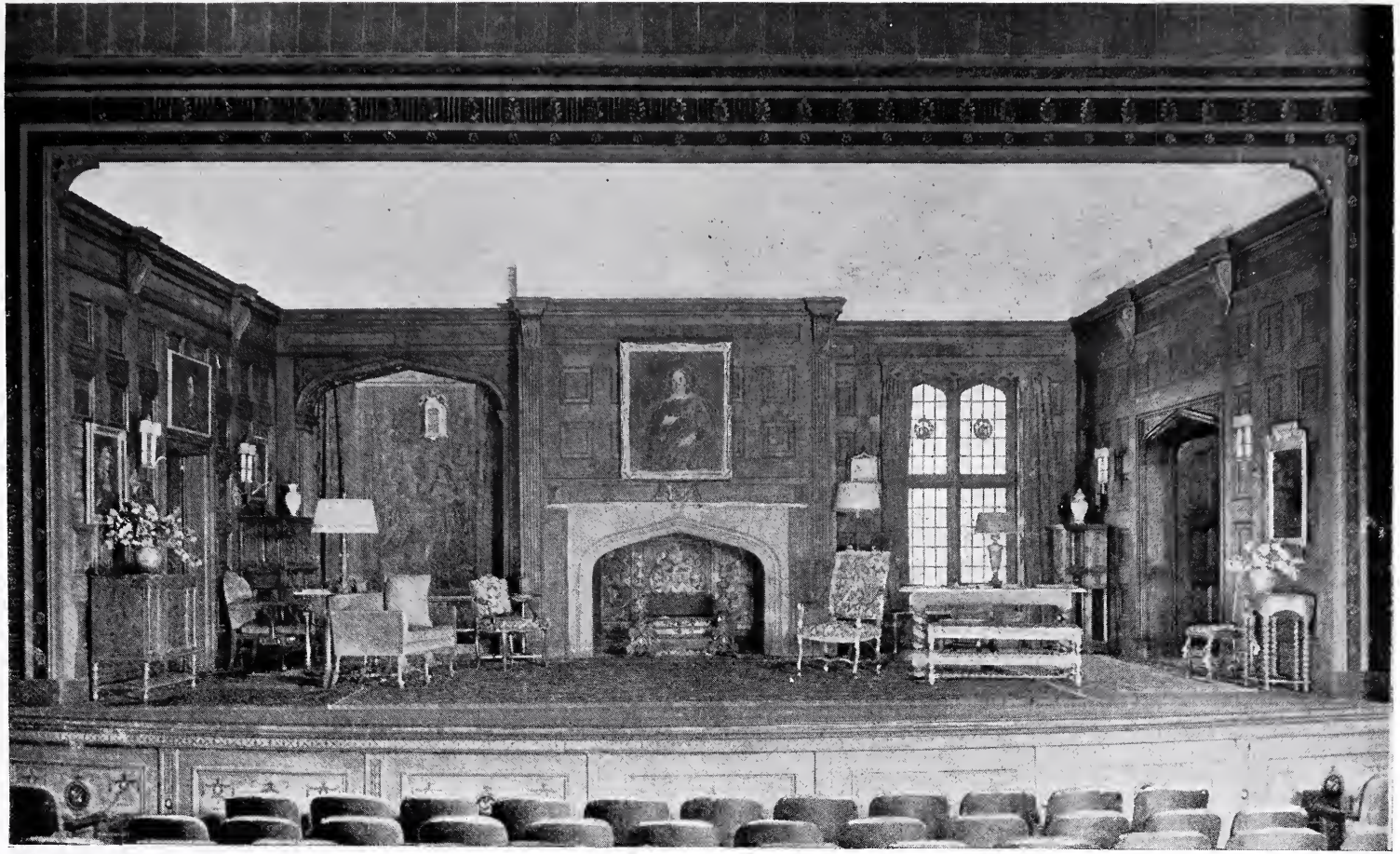
AUDITORIUM—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.



DETAIL OF PLASTER WORK—AUDITORIUM—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.



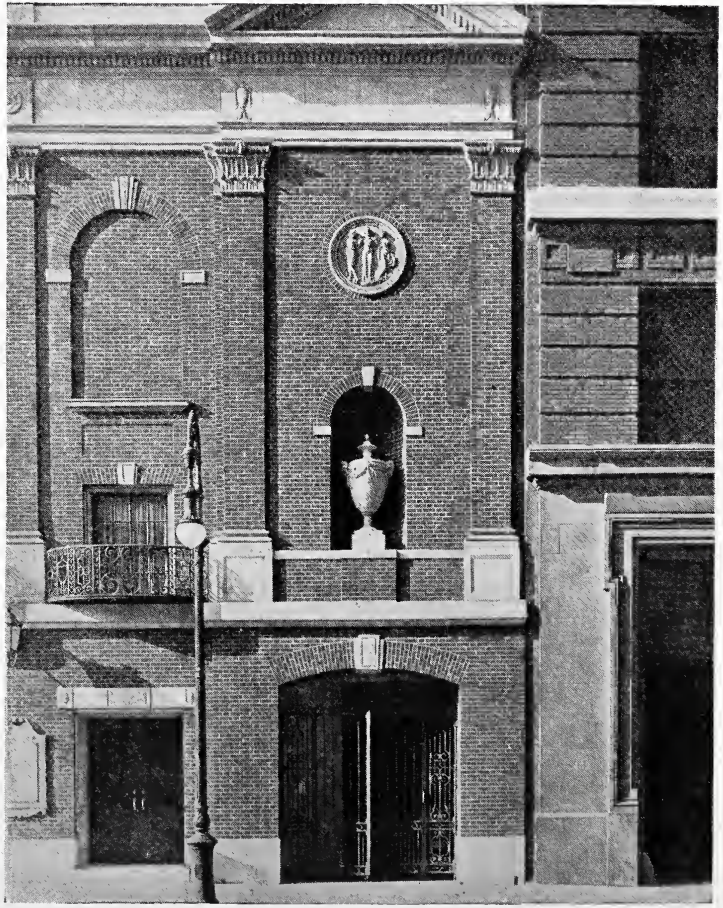
AUDITORIUM—HENRY MILLER'S THEATRE. PAUL R. ALLEN & H. CREIGHTON INGALLS, ASSOCIATED ARCHITECTS.



STAGE SET—"THE FOUNTAIN OF YOUTH." HENRY MILLER'S THEATRE. PAUL R. ALLEN & H. CREIGHTON INGALLS, ASSOCIATED ARCHITECTS.



CENTRAL DOORWAY—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.



DETAIL OF END BAY—HENRY MILLER'S THEATRE.
Paul R. Allen & H. Creighton Ingalls, Associated Architects.

walls. It has meant, too, a considerable addition to the seating capacity of the parquet, the number of seats on this floor (404) being out of all proportion to that in the usual theatre of similar size, and this in spite of the sacrifice of an extra row at the rear by reason of the oval form of the lobby. Hence this room is a monument to the intelligent and appreciative co-operation between client and architect, each willing to give something here to gain a little there for the benefit of the whole.

The first impression of this room is made by the color harmony. The predominating tones are the warm, soft, putty color of the walls and the rich amber of the brocade hangings. The seats of tapestry in very small scale design blend more with the grays of the walls, while the darkest note is struck by the carpet, which is similar to that in the foyer and lounge. The decoration, in the Adam mode, is carried out in the painted panels in grisaille, with accents of bright color in medallions and swags, and in modeled plaster in the architectural members of capitals, cornice and ceiling. In the fans above the boxes the painted decoration has for a background a warm cream, which deepens toward the outer edge to a tone approaching that of the drapery and breaks what would otherwise be a hard line where the amber brocade cuts across its face. One particular detail, which will no doubt form a happy precedent for decorators, is the decoration of the kalamein doors of the exits, whose homely metal surfaces have here been turned into things of beauty and, from the nature of the material, let us hope joys forever.

The desire to create an impression of age has led to the use of glazes upon all of the trim and decoration, so that the whole has been antiqued with a great gain to the interest of texture. Many a good housewife might object to the dusky corners and moldings; but if ever the legitimacy of deliberate "antiqueing" has been justified, it has been in this building.

The use of the lighting fixtures in the room is worthy of note, the main source of light being the great crystal chandeliers hung from the ceiling, aided by the side-lights placed for their decorative value beneath the boxes.

So far we have turned our backs to the stage, which fills the full thirty-three foot space between the boxes. The curtain is of the same amber brocade, with its restrained decoration supporting a medallion portraying "Comedy" and "Tragedy" in a new guise after Mr. Miller's interpretation—the theatre, as an Alma Mater, touching with affection her two children, one of whom, Comedy, strives to draw her to play; the other, Tragedy, turns from her in tears. By an effect of lighting the color of the curtain seems to differ from the other drapery and takes on at times, particularly when the footlights are up, a tone that is not altogether pleasing.

The orchestra is entirely screened from the audience, the music reaching them through louvered openings in the top of the screen.

With the rising of the curtain a further display of the architect's versatility is revealed. The stage sets for the two plays which so far have been produced have been designed under Mr. Allen's and Mr. Ingalls' supervision, with the result of a tasteful and correct interior in each case suitable to its purpose, and the added consideration of an atmosphere which, seeming to pervade both sides of the footlights, gives to each member of the audience the feeling of actual presence in the room on the stage—a consideration of much interest when we consider the disparity between the average theatre and such a stage set as this of "The Fountain of Youth."

Behind the scenes there is much to interest the specialist, but which has little place in so general a description as this. The restriction of the building law forced the shape of the stage house as shown by the section; but by the use of the most-up-to-date counterweight system, the obstacles presented were overcome and the resulting ease of manipulation has simplified, too, the question of

manual labor in setting the stage. The dressing rooms for the players have been given thoughtful consideration, and by the tasteful use of chintz and paint these rooms have been made charming and restful, unlike many of their ilk.

At the inception of the project Mr. Allen associated himself with Mr. Ingalls and Mr. Hoffman, architects of the Little Theatre and Neighborhood Playhouse, for the designing and execution of this particular building. At Mr. Hoffman's entrance into the government service at the very beginning of the work, the onus fell entirely upon Mr. Allen and Mr. Ingalls, and their competent cooperation has given to New York a theatre whose peer is scarce to be found except in the children of their own brains.

The theatre as a whole stands as a monument, first, to the debt which we owe to our mother country for her traditions in the arts; second, to the public whose appreciation in general has risen to such a plane that a theatre of so subtle an atmosphere should rise to meet its demand; and last, but by no means least, to the architects whose authoritative handling of so difficult a problem has served to unite artistically and esthetically two remote periods in the history of an art which may have reached another milestone with its present incarnation at the end of one world epoch and at the beginning of a new.

ARCHITECTURE *and* DEMOCRACY

Before, During and After the War ——

By CLAUDE BRAGDON, F.A.I.A.

II DURING THE WAR

THE best thing that can be said about our immediate architectural past is that it is past, for it has contributed little of value to an architecture of democracy. During that neo-feudal period the architect prospered, having his place at the baronial table; but now Poor Tom's a-cold on a war-swept heath, with food only for reflection. This is but natural; the architect, in so far as he is an artist, is a purveyor of beauty; and the abnormal conditions inevitable to a state of war are devastating to so feminine and tender a thing, even though war be the very soil from which new beauty springs. With Mars in mid-heaven, how afflicted is the horoscope of all artists! The skilled hand of the musician is put to coarser uses; the eye that learned its lessons from the sunset must learn the trick of making invisible warships and great guns. Let the architect serve the war-god likewise, in any capacity that offers, confident that this troubling of the waters will bring about a new precipitation; that once the war is over, men will turn from those "old, unhappy, far-off things" to pastures beautiful and new.

In whatever way the war may complicate the architect's personal problem, it should simplify and clarify his attitude toward his art. With no matter what seriousness and sincerity he may have undertaken his personal search for truth and beauty, he will come to question as never before both its direction and its results.

He is bound to perceive, if he does not perceive already, that the war's arrestment of architecture (in all but its most utilitarian and ephemeral phases) is no great loss to the world, for the reason that our architecture was uninspired, unoriginal, done without joy, without reverence, without conviction—a thing which any wind of a new spirit was bound to make appear foolish to a generation with sight rendered clairvoyant through its dedication to great and regenerative ends.

He will come to perceive that between the Civil War and the Crusade that is now upon us we were under the evil spell of materialism. Now materialism is the very negation of democracy, which is a government by the *demos,* or over-soul; it is equally the negation of joy, the negation of reverence, and it is without conviction because it cannot believe even in itself. Reflecting thus, he can scarcely fail to realize that materialism, everywhere entrenched, was entrenched strongest in the camps of the rich—not the idle rich, for materialism is so terrible a taskmaster that it makes its votaries its slaves. These slaves, in turn, made a slave of the artist: a minister to their pride and pretense. His art thus lacked that "sad sincerity" which alone might have saved it in a crisis. When the storm broke militant democracy turned to the engineer, who produced buildings at record speed by the mile, with only such architectural assistance as could be first and easiest fished up from the dragnet of the draft.

In one direction only does there appear to be open water. Toward the general housing problem the architectural profession has been spurred into activity by reason of the war, and, to its credit be it said, it is now thoroughly aroused. The American Institute of Architects sent a commissioner to England to study housing in its latest manifestations, and some of the ablest and most influential



INTERIOR OF THE RED CROSS COMMUNITY CLUB HOUSE—CAMP SHERMAN.

members of that organization have placed their services at the disposal of the Government. Moreover, there is a manifest disposition on the part of architects everywhere to help in this matter all they can. The danger dwells in the possibility that their advice will not be heeded, their services not be fully utilized, but through chicanery, ignorance, or inanition we will relapse into the tentative, "expensively provisional" methods which have governed the housing of workers hitherto. Even so, architects will doubtless recapture, and more than recapture, their imperiled prestige, but under what changed conditions, and with what an altered attitude toward their art and their craft!

They will find that they must unlearn certain things the schools had taught them: preoccupation with the relative merits of Gothic and Classic—tweedledum and tweedledee. Furthermore, they must learn certain neglected lessons from the engineer—lessons that they will be able immeasurably to better; for although the engineer is a very monster of competence and efficiency within his limits, these are sharply marked, and to any detailed knowledge of that "beautiful necessity" which determines spatial rhythm and counterpoint he is a stranger. The ideal relation between architect and engineer is that of a happily wedded pair—strength married to beauty; in the period just passed or passing they have been as disgruntled as divorcees.

The author has in mind one child of such a happy union brought about by the war. The building is the Red Cross Community Club House at Camp Sherman, which, in the pursuit of his destiny, and for the furtherance of his education, he inhabited for two memorable weeks. He learned there more lessons than a few, and encountered more tangled skeins of destiny than he is ever likely to unravel. The matter has so direct a bearing, both on the subject of architecture and of democracy, that it is worth discussing at some length.

This club house stands, surrounded by its tributary dormitories, on a government reservation, immediately adjacent to the camp itself, the whole constituting what is known as the Community Center. By the payment of a dollar any soldier is free to entertain his relatives and friends there, and it is open to all the soldiers at all times. Because the iron discipline of the army is relaxed as soon as the limits of the camp are overpassed, the atmosphere is favorable to social life.

The building occupies its acre of ground invitingly, though exteriorly it is of no particular distinction. It is the interior that entitles it to consideration as a contribution to an architecture of that infant democracy, of which our army camps have been the cradle. The plan of this interior is cruciform, two hundred feet in each dimension: built by the Red Cross of the State of Ohio, and dedicated to the larger uses of that organization, the symbolic appropriateness of this particular geometrical figure should not pass unremarked. The cross is divided into side-aisles, nave, and crossing, with galleries and mezzanines so arranged as to shorten the arms of the cross in its upper stages, leaving the clearstory surrounding the crossing unimpeded and well defined. The light comes, for the most part, from high windows, filtering down in tempered brightness to the floor. The bones of the structure are everywhere in evidence, and an element of its beauty, by reason of the admirably direct and logical arrangement of posts and trusses. The vertical walls are covered with plaster-board of a light buff color, converted into good sized panels by means of wooden strips covered with a thin gray stain. The structural woodwork is stained in similar fashion; the iron rods, straps and bolts being painted black. This color scheme is completed and a little enlivened by red stripes and crosses placed at appropriate intervals in the general design.

The building attained its final synthesis through the collaboration of a Cleveland architect and a National Army captain of engineers. It is so single in its appeal that one does not care to inquire too closely into the part of each in the performance; both are in evidence, for an architect seldom succeeds in being so direct and simple, while an engineer sel-

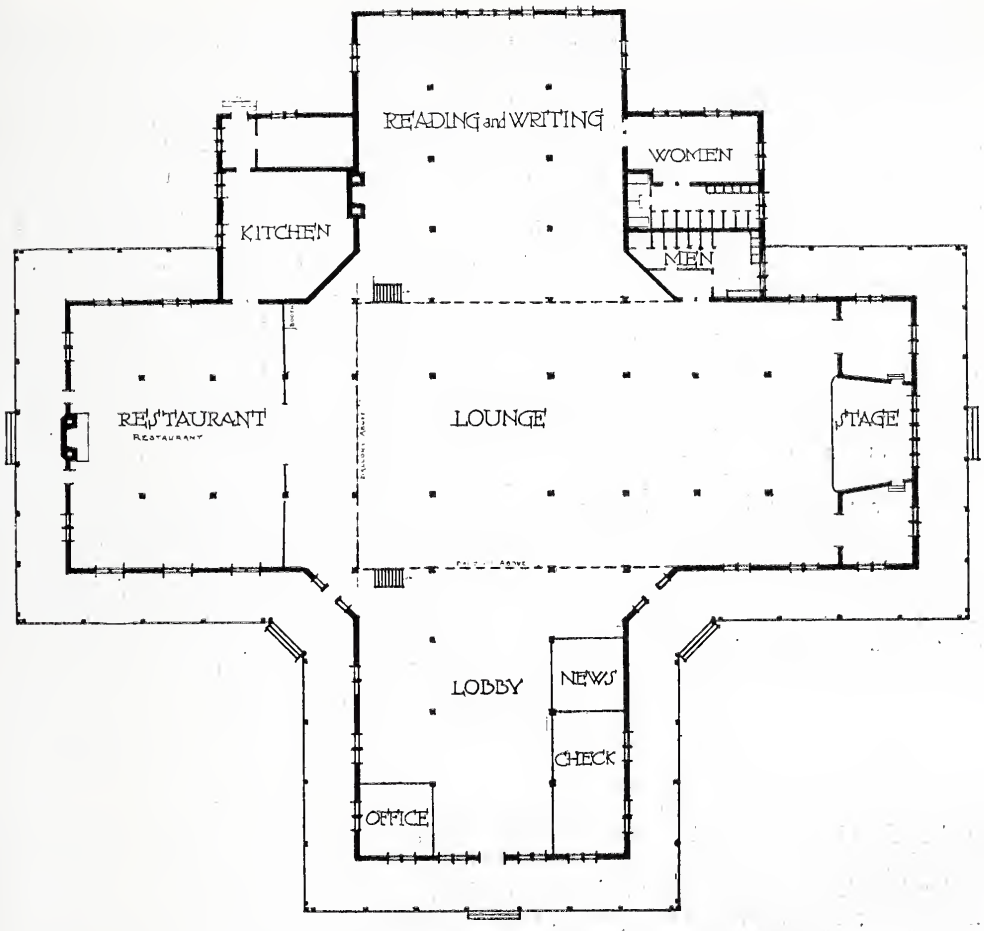
dom succeeds in being so gracious and altogether suave.

Entirely aside from its esthetic interest—based, as this is, on beauty of organism almost alone—the building is notable for the success with which it fulfills and coördinates its manifold functions: those of a dormitory, a restaurant, a ballroom, a theatre and a lounge. The arm of the cross containing the principal entrance accommodates the office, coat-room, telephones, news and cigar stand, while leaving the central nave unimpeded, so that from the door one gets the unusual effect of an interior vista two hundred feet long. The restaurant occupies the entire left transept, with a great brick fireplace at the far end. There is another fireplace in the centre of the side of the arm beyond the crossing; that part which would correspond in a cathedral to the choir and apse being given over to the uses of a reading and writing room. The right transept forms a theatre, on occasion, terminating as it does with a stage. The central floor spaces are kept everywhere free except in the restaurant, the sides and angles being filled in with leather covered sofas, wicker and wooden chairs and tables, arranged in groups favorable to comfort and conversation. Stairways at the right and left of the restaurant give access to the ample balcony and to the bedrooms, which occupy three of the four ends of the arms of the cross at this level.

The appearance and atmosphere of this great interior is inspiring; particularly of an evening, when it is thronged with soldiers and civilian guests. The strains of music, the hum of many voices, the rhythmic shuffle on the waxed floor of the feet of the dancers—these eminently social sounds mingle and lose themselves in the spaces of the roof, like the voice of many waters. Tobacco smoke ascends like incense, blue above the prevailing green-brown of the crowd, shot here and there by brighter colors from the women's hats and dresses, in the kaleidoscopic shifting of the dance. Long, parallel rows of orange lights, grouped low down on the lofty pillars, reflect themselves on the polished floor, and like the patine of time on painted canvas impart to the entire animated picture an incomparable tone. For the lighting, either by accident or by inspiration, is an achievement of the happiest, an example of the friendliness of fate to him who attempts a free solution of his problem. The brackets consist merely of a cruciform arrangement of planed pine boards about each column, with the end grain painted red. On the under side of each arm of each cross is a single electric bulb, enclosed within an orange-colored shade to kill the glare. The light makes the bare wood of the fixture appear incandescent, defining its geometry in rose-color with the most beautiful effect.

The club house is the centre of the social and ceremonial life of the camp, for balls, dinners, receptions, conferences, concerts without number, and it has been the scene of a military wedding—the daughter of a major-general to the grandson of an ex-President. To these events the unassuming but pervasive beauty of the place lends a dignity new to our social life. In our army camps social life is truly democratic, as anyone who has experienced it does not need to be told. Not alone have the conditions of conscription conspired to make it so, but there is a manifest will-to-democracy—the growing of a new flower of the spirit, sown in a community of sacrifice, to reach its maturity, perhaps, only in a community of suffering.

The author may seem to have overpraised this community club house; with the whole country to draw from for examples it may well appear fatuous to concentrate the reader's attention for so long on a building, in a remote part of the Middle West, cheap, temporary, and requiring only twenty-one days for its erection. But of the transvaluation of values brought about by the war this building is an eminent example: it stands in symbolic relation to the times; it represents what may be called the architecture of Service; it is among the first of the new temples of the new democracy, dedicated to the uses of simple, rational social life. Notwithstanding that it fulfills a felt need, common to every community, there is nothing like it in any of our towns and cities; there are only such



PLAN OF THE RED CROSS COMMUNITY HOUSE—CAMP SHERMAN.

poor and partial substitutes as the hotel, saloon, the dance-hall, the lodge-room and the club. It is scarcely conceivable that the men and women who have experienced its benefits and its beauty should not some day demand and have similar buildings in their own home towns.

Beyond the oasis of the community club house at Camp Sherman stretch the cantonments—a Euclidian nightmare of bare boards, black roofs and ditches, making grim vistas of straight lines. This is the architecture of Need in contradistinction to the architecture of Greed, symbolized in the shop-window prettiness of those sanitary suburbs of our cities created by the real estate agent and the speculative builder. Neither contains any enduring element of beauty.

But the love of beauty in one form or another exists in every human heart, and if too long or too rigorously denied it finds its own channels of fulfillment. This desire for self-expression through beauty is an important though little remarked phenomenon of these mid-war times. At the camps it shows itself in the efforts of men of specialized tastes and talents to get together and form dramatic organizations, glee-clubs and orchestras; and more generally by the disposition of the soldiers to sing together at work and play and on the march. The renascence of poetry can be interpreted as a revulsion against the prevailing prosi-

ness; the amateur theatre is equally a protest against the inanity and conventionality of the commercial stage, while the Community Chorus movement is an evidence of a desire to escape a narrow professionalism in music. A similar situation has arisen in the field of domestic architecture, in the form of an unorganized but widespread reaction against the cheap and ugly commercialism which has dominated house construction and home decoration of the more unpretentious class. This became articulate a few years ago in the large number of books and magazines devoted to house-planning, construction, decoration, furnishing and garden-craft. The success which has attended these publications, and their marked influence, give some measure of the magnitude of this revolt.

But now attention must be called to a significant and somewhat sinister fact. The professional in these various fields of esthetic endeavor has shown either indifference or active hostility toward all manner of amateur efforts at self-expression. Free verse aroused the ridicule of the professors of metrics; the Little Theatre movement was solemnly banned by such pundits as Belasco and Mrs. Fiske; the Community Chorus movement has invariably met with opposition and misunderstanding from professional musicians; and, with few exceptions, the more influential architects have remained aloof from the effort to give skilled architectural assistance to those who cannot afford to pay them ten per cent.

Thus everywhere do we discover a deadening hand laid upon the self-expression of the democratic spirit through beauty. Its enemies are of its own household: those who by nature and training should be its helpers hinder it instead. Why do they do this? Because their fastidious, esthetic natures are outraged by a crudeness which they themselves could easily refine away if they chose; because also they recoil at a lack of conformity to existing conventions—conventions so hampering to the inner spirit of the Newness that, in order to incarnate at all it must of necessity sweep them away.

But in every field of esthetic endeavor appears here and there a man or a woman with unclouded vision, who is able to see in the flounderings of untrained amateurs the stirrings of a *demos* from its age-long sleep. These, often forsaking paths more profitable, lend their skilled assistance, not seeking to impose the ancient outworn forms upon the Newness, but by a transfusion of consciousness permitting it to create forms of its own. Such a one, in architecture, Louis Sullivan has proved himself; in music, Harry Barnhart, who evokes the very spirit of song from any random crowd. The *demos* found voice first in the poetry of Walt Whitman, who has a successor in Vachel Lindsay, the man who walked through Kansas, trading poetry for food and lodging, teaching the farmers' sons and daughters to intone his stirring odes to Pocahontas, General Booth and Old John Brown. Isidora Duncan, Gordon Craig, Maeterlinck, Scriabine, are perhaps too remote from the spirit of democracy, too tinged with old-world estheticism to be included in this particular category; but all are image-breakers, liberators, and have played their part in the preparation of the field for an art of democracy.

To the architect falls the task, in the new dispensation, of providing the appropriate material environment for its new life. If he holds the old ideas and cherishes the old convictions current before the war, he can do nothing but reproduce their forms and fashions. For architecture, in the last analysis, is only the handwriting of consciousness on space; and materialism has written there already all that it has to tell of its failure to satisfy the mind and heart of man. However beautiful old forms may seem to him they will declare their inadequacy to generations free of that mist of familiarity which now makes life obscure. If, on the other hand, submitting himself to the inspiration of the *demos,* he experiences a change of consciousness he will become truly and newly creative.

His problem, in other words, is not to interpret democracy in terms of existing idioms, be they classic or romantic, but to experience democracy in his heart and let it create and determine its new form

through him. It is not for him to *impose*; it is for him to be *imposed upon*.

"The passive Master lent his hand
To the vast soul that o'er him planned"

says Emerson in "The Problem," a poem which seems particularly addressed to architects, and which every one of them would do well to learn by heart.

If he is at a loss to know where to go and what to do in order to be played upon by these great forces, let him direct his attention to the army and the army camps. Here the spirit of democracy is already incarnate. These soldiers, violently shaken free from their environment, stripped of all but the elemental necessities of life, and facing a sinister destiny beyond a human-shark-infested ocean, are today the fortunate of earth by reason of their realization of brotherhood, not as a beautiful theory, but as a blessed fact of experience. They will come back with ideas that they cannot utter, with memories that they cannot describe; they will have dreamed dreams and seen visions, and their hearts will stir to potencies for which materialism has not even a name.

The future of the country will be in their young hands. Will they re-create from its ruins the faithless and loveless feudalism from which the war set them free? No! they will seek only for self-expression, the expression of that aroused and indwelling *demos* which shall create the new, the true democracy. And because it is a spiritual thing it will come clothed in beauty; that is, it will find its supreme expression through the forms of art. The architect who assists in the emprise of weaving this garment will be supremely blessed, but only he who has kept the vigil with prayer and fasting will be supremely qualified.



From the architect's original drawing in possession of the Historical Society of Pennsylvania.

EAST FACADE, BANK OF PENNSYLVANIA.
BENJAMIN H. LATROBE, ARCHITECT.

The Bank of Pennsylvania. 1799

An Unknown Masterpiece Of American Classicism

By

Fiske Kimball

AMONG the works of art long since swept away by the ruthless, unexampled growth of cities in America, none was more beautiful than the masterpiece created by Latrobe in his first monumental work on our soil—the Bank of Pennsylvania. Yet this first fruit of the Greek spirit—the worthy forerunner of McKim's chaste and subtle creations a century later—was destroyed at a moment when its qualities were unregarded, and is still unknown to a generation which once more appreciates classic excellence. The crude engravings of it in Birch's contemporary Philadelphia views and in Owen Biddle's "Young Carpenter's Assistant," themselves but little known, give scarcely an idea of its purity and elegance. No photograph or drawing of it has ever been published.

This neglect must now give way, however, on reproduction of the original designs of the architect himself, drawn and rendered with a professional skill which earlier had been unknown in America, giving the form and effect of the building in completeness. In the galleries of the Maryland Historical Society hangs the perspective, our first competent example of preliminary perspective drawing—of architectural "charlatanism," as it was called by a contemporary less familiar with the art. The Historical Society of Pennsylvania has two sets of rendered plans and elevations, an exhibition set at eighth-inch scale, another at sixteenth-inch scale made by the architect for his brother in England. Isolated drawings in the hands of Latrobe's descendants and in the Library of Congress duplicate three of the sheets. Both sets bear dates subsequent to the beginning of work, and show the building in its final form. The perspective only, differing in some respects from the other drawings preserved, seems to have been made prior to the execution.

As the file of Latrobe's professional correspondence which is preserved does not begin until 1803, two years after the building was occupied, the story of its creation must be pieced together from scattered allusions elswhere in his writings, and from the manuscript, "Minutes of the Proceedings of the Stockholders of the Bank of Pennsylvania," now belonging to the Historical Society.

At their meeting of February second, 1798, the stockholders resolved, "That, as the building at present occupied by the Bank is insecure, the President and Directors be and they are hereby authorized to purchase a convenient site for a Banking House, and erect thereon such a building as they may think sufficiently secure and convenient for the purposes of the Institution." The quarters hitherto occupied were like those of the other early banks in not having been constructed especially for banking purposes, and in having no marked architectural character. A single exception was the new marble building of the Bank of the United States in Third Street, Philadelphia, for which the versatile amateur Samuel Blodget had provided an acceptable academic design based on the Royal Exchange in Dublin. Although the Pennsylvania Bank had not the official character and support of its older neighbor, its President, Samuel M. Fox, was determined that it should be housed in the finest manner. His enlightenment as a patron of the arts is highly praised by Latrobe, who said after Mr. Fox's death,



EAST PORTICO—BANK OF PENNSYLVANIA.
Benjamin H. Latrobe, Architect.
From a photograph taken during its demolition, in possession of the Ridgway Library, Philadelphia.

in an oration before the Society of Artists, that "the existence and taste" of the building were due not to the architect but to him.

It was fortunate for the authorities of the bank, nevertheless, that it so happened that in March, 1798, Latrobe came to Philadelphia for his first brief visit, hoping for a government commission. Although he had as yet had no opportunity in America to show his abilities in monumental architecture, his work on the Penitentiary at Richmond already testified to some skill in his profession, and he was armed with the best of letters of introduction. "Among the acquaintances which his letters procured for him," his son writes in the memoir prefixed to Latrobe's published *Journal,* "was the president of the Bank of Pennsylvania. Upon one occasion, when in company with this gentleman, the conversation turned upon the banking house which it was proposed to build, and Mr. Latrobe, having heard described the accommodation that would be necessary, made a sketch of a design while the conversation was going on, with the pen and ink that happened to be at hand, and left it with the president, without the remotest expectation of its ever being executed. In the following July (1798) he was not less surprised than gratified to receive a letter from Philadelphia, informing him that his design for the Bank of Pennsylvania had been adopted, and pressing him to prepare correct copies of the sketch that he had left behind him, and such instructions as would enable the workmen to build it."

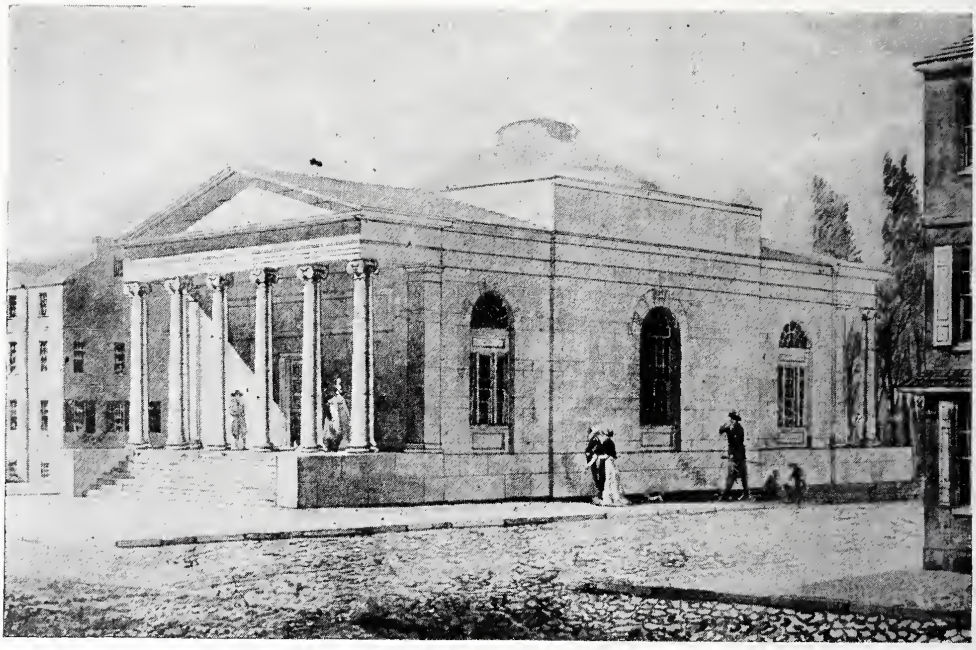
With the construction of the bank and also of the city water works in view, Latrobe thus left Richmond and removed to Philadelphia in December, 1798. On the first of February following, at the annual meeting of the stockholders, the President "stated that a convenient site for a Banking house on Second Street, between Chestnut and Walnut Streets, had been purchased . . . he submitted the plan agreed on for the building and mentioned the forwardness thereof."

The foundation stone of the bank was laid, according to Latrobe's diary, on April fifth, 1799, the arches of the cellar story were completed on July first, and the arches of the principal story on September first. After a report of progress at the meeting in 1800 the President was able to report to the stockholders on January 30, 1801, that the bank "was so nearly completed that it was expected to be occupied in a few weeks—that no expense had been spared to render the building secure, though every possible care had been observed to avoid unnecessary ornament—conforming as much as possible to the plan submitted to the stockholders, and originally determined upon by the Directors."

The design as revealed in the drawings might well be that of an exceptionally pure example of the modern American "one-story" bank of limited frontage—so marked has been the reversion to the type of which it was the very first. A circular banking hall, domed on the model of the Pantheon, forms the centre, with vestibule before and counting room behind. The façades to the streets in front and rear consist each of a pedimented portico six columns wide, in a graceful Greek Ionic order. The side façade has three large arches, which in the perspective embraced both the main and mezzanine stories of vaults and minor rooms, but were afterwards cut down to permit small windows and panels above. Slight breaks in the side wall mark the central room, which rises above the main cornice in a square attic and a saucer dome. In the perspective the eye of the dome is treated as a skylight with a low circular curbing, but in execution a lantern, itself treated with Roman details, was substituted, doubtless as a result of the practical difficulties of climate.

The details of the portico, as seen in old photographs taken during the demolition of the building, bear out the statement of Owen Biddle that it was "a neat specimen of the Ionic order, taken from an ancient Greek temple." The temple on the Illysus is specified by Scharf and Westcott as the source of inspiration, but comparison with Stuart and Revett's plates shows that the order of the North Porch of the Erechtheum was used as a model, although with the columns left unfluted and the capital somewhat less ornamented. The importance of the matter is, of course, that this was the first attempt on this side of the water to substitute Greek detail, with its superior refinement, for academic or Roman forms —a step quite in consonance with modern ideas, but then entirely new in America. Although Jefferson had proposed as early as 1771 to imitate the Monument of Lysicrates as a garden feature, and had owned a copy of Stuart and Revett since 1789, while the Library Company of Philadelphia already had the first volume of it in 1770, academic traditions had so far proved too strongly rooted to permit a single actual experiment with Greek forms. The French professionals here, such as Hallet, were still, like all their compatriots, worshippers of Rome; and the single English professional to precede Latrobe, George Hadfield, was likewise of Roman training. In England, to be sure, the use of Greek details had slowly been gaining ground since the days of Stuart himself, in such circles as that of Latrobe's own master, S. P. Cockerell. Thus it was that with his first important building here Latrobe initiated the Greek revival in America.

That the stimulus under which the design was produced was not entirely the advanced English training of the architect, however, is shown by a note of his own in reference to another question of style: "The Bank of Pennsylvania I know has been much admired, but it would have been much handsomer if Joseph Fox and the late John Blakely, Esqrs., directors, had not confined me to a copy of the Parthenon at Athens." It thus appears that some of the American laymen wished to go much farther in the direction of a literal classic imitation—applying the basic idea of Jefferson for the Virginia Capitol, with the adoption of a Greek model—and that the English professional resisted and defeated this,



THE BANK OF PENNSYLVANIA.
Benjamin H. Latrobe, Architect.
From the architect's original drawing in possession of the Maryland Historical Society.



NORTH FLANK—BANK OF PENNSYLVANIA.
Benjamin H. Latrobe, Architect.
From the architect's original drawing in possession of the Historical Society of Pennsylvania.

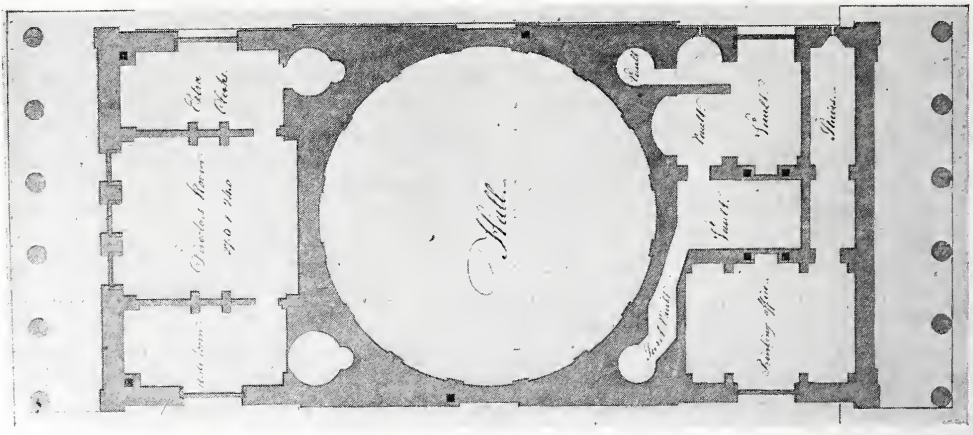
except in so far as it involved the employment of his preferred Greek forms of details. The parallel experiences later, with the Second United States Bank and with Girard College, where laymen succeeded in coercing the architects to imitate the full temple form for utilitarian buildings, establishes beyond question the essentially American initiative of this extreme of classicism. Its dislike of following the contemporary traditions of Europe was an outcome of the idea of national independence; its insistence nevertheless on the support of unimpeachable authority was an inevitable suggestion of the parvenu. Although the choice of Greece as the final authority was already foreshadowed by developments in Europe, such slavish imitation of Greek buildings as the Americans proposed was not reached there until much later.

Even though the Bank did not wholly realize the ideas of the most radical of its directors, its novelty in America was sufficiently striking. One has only to note in the perspective the contrast between the building and its neighbors to appreciate the change it denotes between our colonial and our national architecture. The classic and monumental qualities of the building, to be sure, were shared in less degree by other buildings of the new republic—the Virginia Capitol, L'Enfant's Federal Hall, the Bank of the United States already mentioned, the unfinished federal buildings in Washington—but none of these embodied so well a vision of classic beauty, realized in stone through professional skill. Indeed,—although later Latrobe's example was followed until the Wall Street of 1830 might well suggest the row of treasuries at Olympia,—for a long time after its erection the Bank of Pennsylvania remained unique.

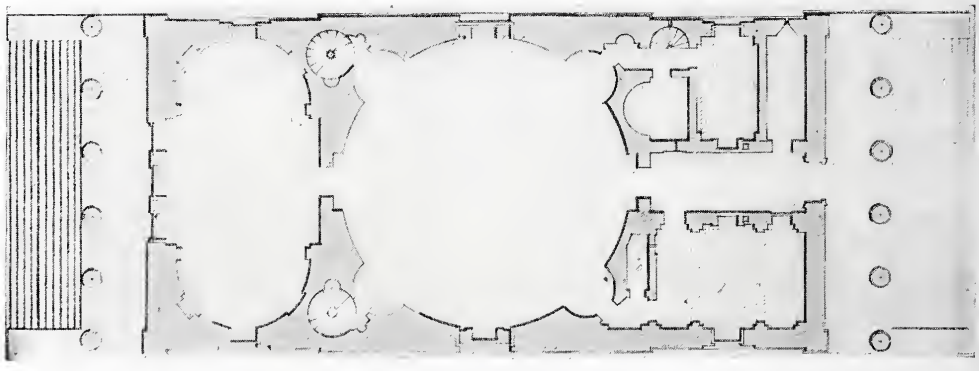
In construction the building was quite as novel here as in design, for it was vaulted throughout in masonry. The old Exchange in Charleston, built in 1767-1771, had groined vaults of brick in the basement story, but there was nothing anywhere in the states comparable to the great domed banking room and the suites of fireproof offices which Latrobe provided. The innovation, so far as it concerned the vaults and offices, was of such obvious advantage, however, that it led immediately to extensive imitation. Thus by 1810 John Dorsey, of the building committee for the capitol at Harrisburg could write: "I regret to lose time and patience on the subject of Fireproofs, they are so perfectly understood in Philadelphia where there are hundreds of them."

With this higher standard of construction went inevitably a higher standard of expense. At the stockholders' meeting of January 29, 1802, "The President laid before the meeting . . . a particular account of the expenditures in the purchases of lots and erecting the Banking-house . . . including the cost of the palisade inclosure, of building watch-houses, paving the alleys, compensation to the architect, stationery and other incidental expenses, amounting to 216,180 24/100 dollars, representing at the same time by way of estimate that an additional sum of about 12,000 dollars will yet be required to complete the finish of the whole." In a letter to a later client, General Harper, Latrobe states the cost of the bank, including furniture, as $25.16 per square foot.

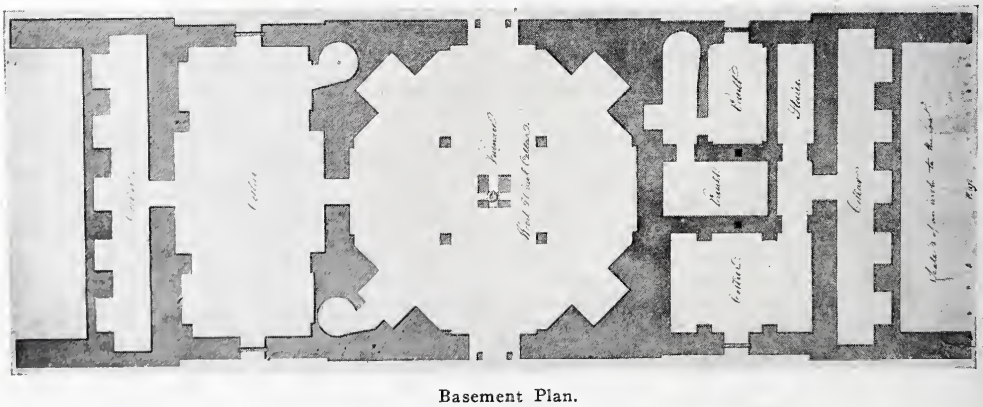
As compared with the cost of five or six dollars per square foot then current for ordinary brick buildings in Philadelphia, these costs could not fail to lay the architect open to criticism. Regarding these Latrobe wrote, in a letter to Bishop Carroll, a few years later: "As to the charges of extravagance in my works, I can prove to you, if you desire it—that in all cases in which I have given an estimate, and the work has not been altered or enlarged in its progress, my estimates have been correct, and I further assert that if the Bank of Pennsylvania, the building to which the charge of extravagance is commonly applied, were measured and valued according to the usual mode and prices, it would amount to $40,000 more than its actual cost—that the two porticos cost a few hundred dollars less than my estimate of $57,000, and



Second Floor Plan.



First Floor Plan.



Basement Plan.

BANK OF PENNSYLVANIA. BENJAMIN H. LATROBE, ARCHITECT.
From the architect's original drawings in possession of the Historical Society of Pennsylvania.

that in the whole there is a very small excess." The directors, indeed, had undertaken the expense with their eyes open, and Latrobe records elsewhere that in this building he had no dispute with anyone.

The policy of the directors in erecting a splendid building does not seem to have involved any disastrous financial consequences, but to have proved an enlightened act of investment. In the fatal panic of 1837, however, the bank failed, in common with so many others, and the building passed to different uses. After the Civil War the site came into possession of the government, and the building was taken down. A legend exists in Philadelphia that the stones were transported to some town in Maine to be reerected as a custom house, and still remain there in storage owing to a change of plan. A careful search in the Maine seaports has failed to substantiate this, however, and Mr. Joseph Jackson, the veteran correspondent of the Philadelphia *Ledger,* states with assurance that the story is erroneous. The stones, proving to have no takers when offered for sale, were used in building the foundations of the Appraisers' Stores, which thus mark the grave of this artistic masterpiece.

Although when it met its end in mid-Victorian darkness, the bank found no one to value or appraise it, this was by no means the case in the days of its first building. The architect has recorded in his diary as the one compliment he valued, the unaffected praise of the French major, Beaujour, "a man of great talents . . . long in Greece and Egypt . . . a perfect judge of the fine arts." "Walking up Second Street," writes Latrobe, "I observed two French officers standing opposite the building and looking at it without saying a word. I stepped into Black's shop and stood close to them. After some time, one of them, who I believe was Mr. Beaujour, exclaimed several times, *'Si beau, et si simple!'* . . . He said no more, and stood for more than a quarter of an hour longer before he walked away with his companion."



HAMPSTEAD GARDEN SUBURB.



HAMPSTEAD GARDEN SUBURB.

INDVSTRIAL HOVSING DEVELOPMENTS IN AMERICA

By LAWRENCE VEILLER
Secretary of the National Housing Association

PART VI
HOUSING AFTER THE WAR

WITH the enemy still only fifty-five miles from Paris, it may seem to many premature to discuss things that may happen after the war. Whether the war ends to-morrow or three years from now, however, we shall have the same problems to face.

All of the housing problems that we had with us before the war began, we shall still have with us when the war ends. The problem of the city slum will still face us. Perhaps at that time it will cry out for solution more imperatively than it does to-day. Perhaps the country will tolerate with less patience than at present the "miasmatic breath blown from the city slums." Perhaps, when it contemplates the significant facts of physical unfitness of the youth of the country disclosed through the war, when it reflects upon the fact that from 66 to 70 per cent of our youth of draft age, 21 years to 31 years, were found ineligible for military service because of physical defects, the country as a whole may come to the conclusion that we have paid dear for our slums.

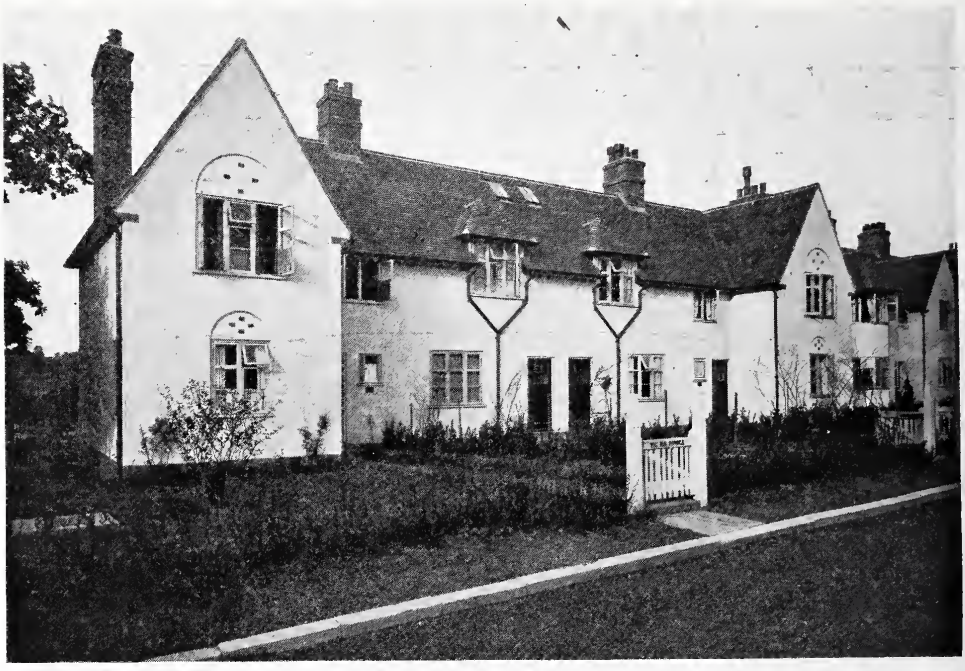
No matter what else it does, the country must set itself resolutely to make the slum a thing of the past.

We may even have a new national slogan in "Slumless America." To achieve this, however, means that the abolition of the slum must become a national issue politically. Housing has been a political issue in Europe for nearly a generation; there is no reason why political battles shouldn't be fought here on similar questions. They are fraught with more consequence to the nation than the tariff, the liquor question or bimetalism. When this happens, however, we shall need to have a national housing program as well as a national housing policy.

The vault, that sink of iniquity and relic of barbarism, which still exists to-day by the hundreds of thousands throughout the large and small cities of the country must be banished forever. The dark room, breeder of tuberculosis and other infections, must be outlawed, not merely in the tenement, but in the cottage as well.

Congestion, that evil of great cities, which as yet has only begun to show itself here and there throughout the land, must be headed off. Room overcrowding and its attendant peril, the lodger evil, must be resolutely dealt with. Before the war, it was a menace to our national welfare. The war has intensified the evil. Unless dealt with effectively, it will ultimately threaten our national existence.

Acceptance of these statements implies that which will not be so readily agreed to; the enactment of a National Housing Law. To those who know with what difficulty housing laws have been secured



HAMPSTEAD GARDEN SUBURB.



HAMPSTEAD GARDEN SUBURB.

in a few states and cities, after what laborious uphill battles against adverse interests, this will indeed sound like the millennium. But if the slum is to go—if indeed merely future slums are to be prevented from developing, this is essential.

And what of the slums that are already here? Will these be wiped out? I venture to think so. We have tolerated them too long already. While we have been reluctant hitherto to follow the example of Europe and especially of Great Britain in embarking on vast reconstruction schemes, that is one of the things the war will have taught us. We are beginning to realize even now that it is less costly in the long run for the State to spend vast sums in wiping out insanitary areas than in paying for them indirectly in poverty, disease and crime.

All these are problems we had with us before the war. The war, however, has brought new problems with it—problems that will need to be faced when the war is ended, if not before.

We face to a large extent the same problems that England faces. To some extent, but only slightly, what France faces; for, neither we nor England have been invaded. We have no devastated areas to reconstruct, no vast populations to rehouse.

All three countries, however, face now, and will have to deal with it after the war, the problem of meeting a vast shortage of houses. The building of houses in all three countries has practically ceased since the war began.

England, according to conservative estimates made recently, needs *a million new houses*. And during the next ten years, it is estimated, will need two million houses. Up to the time of the war the speculative builder had provided most of England's new housing. For ten years before the war, however, there had been a very serious falling off in production.

In the forty largest cities in England and Wales, for example, the production of new houses decreased from 32,000 a year in 1904 to 12,000 a year in 1914. At the same time the average yearly increase in population in those cities from 1901 to 1911 was 96,896; and from 1911 to 1914, the three years before the war, was 129,028, while the average number of new houses built per year in that time was less than 14,000.*

A variety of reasons have been assigned to account for this situation; the high cost of building materials, the inability of the workers to pay an economic rent, and especially the Finance Act of 1909 which many observers believe put a serious check on private enterprise.

The war with its prohibition of building, except for the most urgent needs, put the finishing touch to the situation.

Where are the one million houses that England needs to-day to come from—or the two million that it is estimated she will need in the next ten years?

Can the speculative builder who failed to meet England's needs ten years before the war be relied upon to meet her needs to-day? It seems hardly likely. Every thing is against it. The rate of interest on sound investments in England has risen from 3½ to 5½ per cent.; the cost of building materials has gone up from 30 to 50 per cent. since the war.

This situation has given great concern to thoughtful observers in England.

Ewart G. Culpin, Secretary of the Garden Cities and Town Planning Association of England, as long ago as October, 1916, said in reference to an "After-the-War Housing Policy":

"It seems to be agreed that the housing of the future will not be undertaken by private individuals unless there are very drastic alterations in legislation both as to taxation and financial assistance, and it has been taken for granted that the only alternative to this is housing by local authorities. . . . It is not everybody who is agreed upon the desirability of municipal housing, and, whatever may be our opinions, we have to face this fact and to realize that municipal housing has been on many occasions—and probably will be on many more occasions—the subject of the rough and tumble of municipal elections."

Even the operative builders themselves

*Report of the National Conference on Housing After the War, an organization of operative builders of England. January, 1918.



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realize that private enterprise unaided is unequal to the situation. In the Report of the National Conference on Housing After the War, already referred to, they say:

"The concern of this conference is to enable housing accommodation to be provided after the war. As the great volume of private capital ordinarily available cannot be relied upon until the confidence of investors has been restored, the State will have to come to the assistance of private enterprise and other agencies who will undertake this work."

In a striking presentation of the claims of the Garden City, published under the title "New Towns After the War," it is said:

"During the war the building of houses, except in a few munition areas, has practically stopped, and overcrowding has reached an intolerable point. Everyone recognizes that the moment the war is over the building industry must be set energetically at work to make up the shortage. Everyone agrees also that in the organization and financing of these housing activities the State will be called upon to take a decisive part."

Thus, we have the testimony of three widely separate groups—the public utility societies, the operative builders and the advocates of Garden Cities — that the State must play an important part in whatever housing is done after the war.

England, fortunately, is alert to the situation, and in thorough British fashion is thrashing out now in anticipation of her hour of need the questions that need to be considered, so that when the time for action comes she may be fully prepared. The British Labor Party in its Reconstruction Program has housing as one of its chief planks. It says:

"In order to prepare for the possibility of there being any unemployment, either in the course of demobilization or in the first years of peace, it is essential that the Government should make all necessary preparations for putting instantly in hand, directly or through the local authorities, such urgently needed public works as the rehousing of the population alike in rural districts, mining villages and town slums, to the extent possibly, of a million new cottages and an outlay of three hundred million sterling (about $1,500,000,000)."

Thus, we find on all sides and in every quarter a recognition of the need and an agreement by the most diverse elements that upon the shoulders of the State the chief responsibility rests. Naturally, different views are held by different interests as to the methods by which the desired ends are to be achieved. The operative builders hold that it should be done through Government subvention to private enterprise; the public utility societies that it should be done through organizations such as theirs; another group believe that it should be done by the local or municipal authorities; and others believe it should be done directly by the Government.

One of the most interesting proposals that has been put forth is that presented in the book "New Towns After the War," already referred to, published anonymously during the past winter and written evidently by some one thoroughly familiar with town-planning and the Garden City movement.

The writer advocates the establishment by the Government after the war of 100 new towns of the Garden City type. "Manufacturers interested in the efficiency of British industry, workingmen and women wanting better surroundings for their life and work, agriculturalists seeking a reconstruction of the rural system, . . . all who have a regard for the bodily, social and esthetic health of the nation" are appealed to for support of this scheme.

It is a far-reaching proposal on a colossal scale, in direct opposition to many of the other schemes proposed. Of these, the writer says:

"The after-war housing schemes foreshadowed by the Local Government Board, and even the maximum programmes of the propagandist housing and town-planning societies, promise merely a speeding up of the present essentially unsound development. There is no thought of national design. If all the proposals are carried out we shall



ENGLAND'S GOVERNMENTAL GARDEN VILLAGE. WELL HALL, WOOLWICH—VIEW IN WELL HALL ROAD.



ENGLAND'S GOVERNMENTAL GARDEN VILLAGE. WELL HALL, WOOLWICH—VIEW OF WHINYATES ROAD.

have many more Garden Suburbs placed on the fringe of great cities, and some subsidized cottage building in the villages, but no attempt to treat the industrial and psychological causes of urban overgrowth and rural decay. None of these schemes goes to the root of the matter. . . . They will perpetuate and even extend the fundamental evils of our urban system and do nothing to arrest the decline of the small towns."

Even in England, where the Garden City idea is far better understood than it is in America, it is still imperfectly apprehended and the Garden City is often confused in the popular mind with the Garden Suburb and the Garden Village. As expressed in "New Towns After the War," it is essential "in order to protect the vital feature of limitation (of size), the town must be encircled by a belt of open land, wide enough to possess a distinctively rural character and to permit of farming on the scale proper to the district. And in order to keep other towns at arms' length, and to maintain direct contact between urban and rural life, this belt of land must be permanently reserved for agriculture." Limitation of size considered so essential is expressed by a maximum population of 50,000, which "with an average density of 25 persons to the acre, would require an urban area of about 2,000 acres."

This is the scheme as stated. Even in these days of vast projects it takes one's breath away. One hundred new towns, with a population of five million people to be built where to-day there is nothing but open country and at a cost of possibly twenty-five hundred million dollars, each town not only to be a complete entity in itself, self-contained and sustaining within its own confines, its own population, supplied with all public utilities, water, gas, sewers, light, streets, pavements, shops, factories, amusements—but, in addition each town to be a model of what every town ought to be—with its rural belt and its agricultural industries and population—and all of these towns to be so strategically located as to serve the needs of all of England.

The English plans are by no means limited to this far-reaching scheme. Thomas Mawson, England's distinguished town planner, over a year ago in his book, "An Imperial Obligation," suggested the establishment of numerous "Heroes' Villages," along Garden City lines, in which the vast army of wounded and disabled soldiers who have given their all for their country might find new occupations suited to their changed conditions under such surroundings as would tend to make for their welfare and happiness.

Of the returned disabled soldier he says:

"He shall not stand in the mean courts of a large town such as that into which he will inevitably drift if we do not will it otherwise; where life is drab and drear and even the light of the sun is obscured by clouds of smoke, so that green things and wild living things in which the heart of every man who *is* a man delights, have taken themselves elsewhere."

Nor is the Government any less alert to its obligations or responsibilities than are these distinterested observers and students of England's life. England for some time has had its Ministry of Reconstruction. Under it, 87 commissions and committees are at work planning for rebuilding after the war is over. These are the questions that England, with the battle line almost at her very door, is considering.

What of America? Has she at last learned the lesson of her unpreparedness? Or, will she repeat in this field of industrial welfare, the same mistakes she made in the field of war?

Are the conditions that we face here at all similar to those England faces? All thoughtful men, I think, will admit that they are very much the same.

We face a similar housing shortage; we face a similar increase in the cost of building; we face too the inability of many workers to pay an economic rent.

Here, as in England, private enterprise had broken down at the advent of the war. To-day it is at a standstill. The financing of industrial housing schemes



ENGLAND'S GOVERNMENTAL GARDEN VILLAGE. WELL HALL, WOOLWICH—VIEW FROM DICKSON ROAD.



ENGLAND'S GOVERNMENTAL GARDEN VILLAGE. WELL HALL, WOOLWICH—VIEW IN GIBBORNE WAY.

without Government aid is equally difficult here, if not indeed impossible.

We shall face, undoubtedly, after the war the necessity of building on a vast scale. Whether we shall build 100, or 50, "New Towns," on Garden Village lines with Government funds, will depend very largely on the success or failure of the industrial housing communities now being developed under Government control with Government funds by the U. S. Department of Labor and the Shipping Board.

We too shall need to provide adequately and appropriately for our returned disabled soldiers, no longer able to compete with their civilian brothers not so handicapped, though we hope we shall not have the half-million England is said to have. Perhaps we, too, may build "Heroes' Villages" for them, along Garden City lines.

The war has taught us many things already. It will teach us many more. In one thing it has taught thrift to the most wasteful nation in the world. It has taught us a new respect for food. It has given a new significance to rural life.

Many things that the Government never did in the past it will do after the war. With greater control will come less waste, greater efficiency. The establishment of Industrial Zones has already taught us the folly of manufacturing goods on the western coast to be hauled all across the continent to be sold on the eastern coast.

We are beginning to learn in a host of ways the value of cities intelligently planned. Not only is the Garden City coming into its own with town planning, but rural planning as well is beginning to be considered.

The war has brought much with it that we never looked for. In the recent words of our great leader, Theodore Roosevelt:

"When we have closed the giant war, we must then prepare for the giant tasks of peace."

THE SPIRIT *of the* RENAISSANCE

By Beverley Robinson

ACCEPT this then for universal law, that neither architecture nor any other noble work of man can be good unless it be imperfect; and let us be prepared for the otherwise strange fact, which we shall discern clearly as we approach the period of the Renaissance, that the first cause of the fall of the arts of Europe was a relentless requirement of perfection. . . ."

One may venture perhaps to quote Ruskin now in this very transitional period of architecture, and, for that matter, of all phases of human endeavor. While architecture, like other arts, is much obscured in the lore of antiquity, this is a time when all questions of point of view and of taste are being thoughtfully reconsidered.

Although Ruskin is generally recognized as a man of unusual powers of observation and of generalization, his weakness lay in his continual attitude of looking backward. All who would attempt such tasks as his must, in spite of the difficulties, look forward sympathetically into future development, lest they find their views prematurely antiquated.

What Ruskin meant to denounce in the Renaissance was not its perfection, but that which in another place he thus expresses: "But the Renaissance is exactly the contrary of all this. It is rigid, cold, inhuman, incapable of glowing, of stooping, of conceding for an instant." Not the "perfection," but the regularity, the "stiffness" of it, were the qualities that he objected to.

These are quite clear faults that should be guarded against in any style of design, but I believe that the invalidity of such charges as aimed especially against the Renaissance can be shown. Certainly in Italy at no time was there such "perfection" and stiffness as has been universal during this and the previous century.

The freedom of the early Italian Renaissance is well known. Familiar to all are the delightfully miscellaneous types of capitals and pilaster shafts with their fascinating arabesque decoration. Nor am I prepared to believe that their spontaneity and variety resulted from anything but the *joie de vivre* prevalent during this period of self-confessed humanistic thought. While there was at that time a lack of written material on ancient architecture, and few were the men who had a first hand knowledge of the Forum, in spite of these difficulties the architects of the Quattrocento could have produced closer copies, had it been that their sole aim was to reproduce the glories of ancient Rome to the extent that the writers of the day so often declare.

Another feature which showed particularly marked freedom during the early period, and continued to be interesting through later periods, was the rusticated masonry. Much the most successful example of this is in the Palazzo Strozzi. (Fig. 1.) Here the courses show differences in the length of the stones as well as in the heights of the courses, proving that the designer's mind was keenly sensitive to the beauty derived from making motives which seem alike at first glance, really as various as possible. This deliberate construction of differences can be seen where some of the units designed as long stones are really made up of several smaller ones, with joints as nearly invisible as possible. Thus in the illustration the stone marked A shows one of these invisible joints upon close examination.

In the Palazzo Rucellai the erudite Alberti, in spite of his alleged pedantry, shows the same fondness for studied irregularities in the naturally formal lines of the rustications. See Fig. 2.

Perhaps the most striking of ornamental details produced during the early Renaissance is the baluster. It is so thoroughly abstract in form, so purely intellectual in conception, and therefore completely beyond the disparaging charge of sensuousness, often brought against the Renaissance by those who idealize Gothic alone. Furthermore the baluster is entirely a product of the Renaissance, the slight resemblance that it has to Roman vases and candelabrum shafts being too remote to permit them to be counted as certain prototypes.

Frankl, in his excellent work, *Die Entwicklungsphasen Der Neuern Baukunst,* states that the earliest balustrade is to be found in front of the Villa Poggio Caiano, by Giuliano da San Gallo, and gives the date as 1485. I am inclined to think that the balustrade of the balcony of the side window of the Palazzo Cornaro Spinelli, in Venice, shown in Fig. 3, is probably a few years earlier. Raschdorf, in *Palast-Architectur von Ober Italien,* says that this balcony is of the original building, which he dates between 1475 and 1485.

Another phase there is in Renaissance design, thus far largely overlooked, which is begun during the Quattrocento and carried through the whole development in Italy, that is the matter of constructed variations, similar to those of the Middle Ages, so ably investigated and presented by Professor William H. Goodyear.

While in the court of the Palazzo Bevilacqua in Bologna, I observed that both stories of its beautiful arcades are planned on curved lines which are convex to the centre of the court. This irregularity is precisely like those of the forecourts of the Egyptian temples, and the medieval cloisters which Professor Goodyear has investigated. One of these curved medieval cloisters is in this same city of Bologna—that of the Celestines—and this may have suggested the curves of the Renaissance court.

Few realize the freedom and vitality



FIG. 2. FLORENCE, PALAZZO RUCELLAI, 1451-55, BY LEON BATTISTA ALBERTI.

that was prevalent during the following period, the Cinquecento, the so-called formal period of the Italian Renaissance. At the extremes of this period we find other examples of constructed variations.

Mr. Kingsley Porter has observed curves in the plan of the cloister of the church of Santa Maria della Pace, in Rome, one of Bramante's early achievements; while in Venice Professor Goodyear has found in the two churches by Palladio, Il Redentore and San Giorgio Maggiore, the interior upward widening, and in the façade of the latter, added later by Scamozzi, a forward lean or overhang. These are the same kinds of variations as were of repeated occurrence in the Middle Ages.

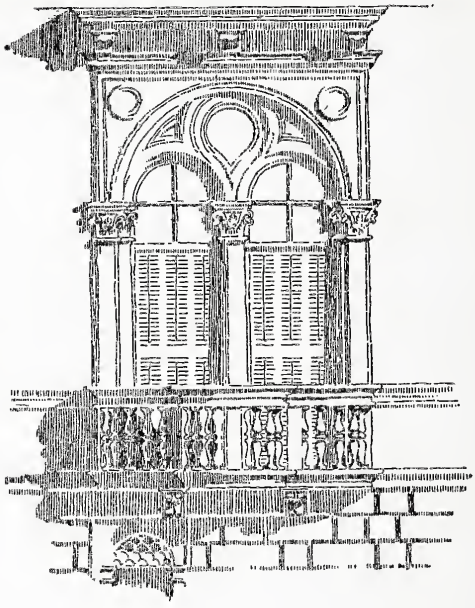


FIG. 3. VENICE, PALAZZO CORNARO SPINELLI, 1480. DESIGNED BY ONE OF THE LOMBARDI.

The balusters of this period show marked variety. While in Rome I had an opportunity to observe carefully the form of a baluster of the Palazzo Spoletto, which stands opposite the Palazzo Massimi Colonna, and found it to have a most interesting modeling. It was of the early double-sleeved type, but the members of the upper half were each one slightly smaller, both in height and width, than its fellow of the lower half, just as one naturally makes the upper curve of the letter S smaller than the lower curve. The difference was at first glance unnoticeable; only upon taking some measurements did the scheme of its variations become apparent. I believe that were many of the published drawings of double-sleeved balusters to be accurately measured, they would show similar asymmetry, exactly as Dehio and Bezold's plan show such great divergences from those of the same churches made by Prof. Goodyear.

The baluster of the single-sleeved type was produced at this time, and, together with its predecessor of the double-sleeved variety, continued in general use, all sorts of variations being continually introduced into both types. The most beautiful of

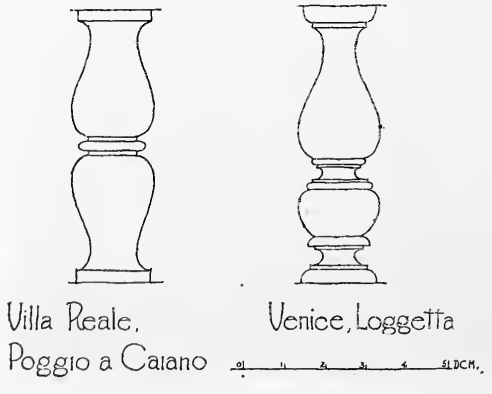


FIG. 4. THE BALUSTER IS ENTIRELY A PRODUCT OF THE RENAISSANCE.

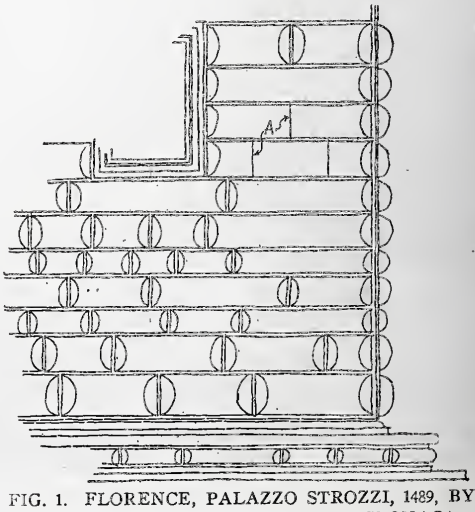


FIG. 1. FLORENCE, PALAZZO STROZZI, 1489, BY BENEDETTO DA MAJANO AND IL CRONACA.



FIG. 5. VENICE, LIBRARY OF ST. MARK, 1536, BY SANSOVINO.



FIG. 8. FONTANA TREVI, 1736, BY SALVI.



FIG. 6. ROME, VILLA MEDICI.



FIG. 7. BASILICA AT VICENZA. ARCADES BY PALLADIO, 1549.

all is one that is half way between the two in point of development, found in the lower railing of Sansovino's Logetta at Venice, shown in Fig. 4. It is but one of the many playful changes practised.

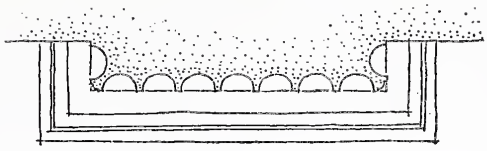


FIG. 9. ANGLE MOLDING.

Certainly no one can accuse Sansovino's other masterpiece, the famous Library of St. Mark, of stiffness or coldness, with its splendid big frieze, far beyond the usual classical size, and in detail, his bold touch in the bent medallion turning the angle metope of the lower order, as in Fig. 5.

The free and vivacious spirt of this "formal" period is best observed in the villas of the day, any one of which will serve for an illustration. Figure 6 shows the Villa Medici in Rome, which in its variety of ornament, the power of its central loggia, and in the novelty of its proportions shows that the often declared "formality" of the Cinquecento might better be called maturity. It was a time when just as much freedom was in vogue, but it was executed with a self-confident force.

Palladio's work in the north, as is well known, for the most part does not follow the rules laid down by this expounder and apostle of Vitruvius, and are in fact far freer and more individual in type than is usually appreciated.

His Basilica at Vicenza (Fig. 7) shows the curious terminal bays which are narrower than those of the middle. Authors generally attribute this irregularity to certain insurmountable difficulties which occurred in transforming the older building. Although we can well sympathize with the problems of an alteration job, any architect who objected to such an irregularity could somehow have found a motive that would have secured regularity. The truth probably is that he liked it, not only for the feeling of firmness that it gives to the start and finish of the rhythm of arches, but because the slight irregularity adds a charm of its own to the whole. Had an architect of the present day designed it, the result would have well merited Ruskin's condemnation. This tendency of Palladio toward frank, free expression can be found in all his works.

There is no doubt that following the time of Palladio and Vignola, there was, as a general thing, a greater stiffness in handling the orders; but, on the other hand, in the planning and decoration of structures, this period is distinguished by its spirited character, which only recently men have been able to appreciate in spite of the mists of puritanical ethics that have hitherto beclouded their vision. The intense feeling in Baroque design has tended to provoke proportionally superlative praise or condemnation, according to the qualities of the example under consideration.

Who can view the Fontana Trevi, shown in Fig. 8, without being aware of the warmth, richness and softness of effect? Its theatricality is perfectly frank, deceiving no one, and is in harmony with the ecstatic nature of the thought of that day.

The great pilasters, so characteristic of this period, fail to please, not through ineffectiveness but through overeffectiveness, to the point of being overwhelming. They are just as much a *tour-de-force* in their way as the openwork spires or the fan vaults of the Middle Ages.

But while colossal pilasters may seem dry and inexpressive through their too frequent recurrence in certain vicinities, in detail some of them are very well considered. Figure 9 shows a sketch of the angle molding of a pilaster like those of St. Peter's or St. John Lateran, with a rule joint instead of a mere fillet. Without this rule joint the angle filled would be wholly out of scale with those of the middle of the shaft in pilasters of so huge a size.

The variety and cleverness of planning in the Baroque period is admirably exemplified in the justly famous church of Santa Maria della Salute in Venice, shown in Fig. 10. As observed by W. J. Anderson in his work on the Renaissance of Italy, skill is manifest in the bold transition which the brackets form be-

tween the chapels below and the dome above. Likewise the reentrant angles of the interior of the major dome are cleverly masked with three-quarter round columns, instead of the usual and less successful pilaster treatment.

Besides, note that the two domes appear to be the same size both in plan and elevation, although really quite different, due to the optical tendency to attribute this difference to perspective.

The Italian Renaissance died mainly as a result of the economic losses that Italy had sustained in the previous centuries, which now were fully felt. The cutting off of all land routes to India by the Turks after their conquest of Egypt in 1520, robbed the Italian cities of their importance as trading posts to northern Europe. In addition there were the galling yokes of foreign masters to be sustained.

As a consequence there followed a continual reduction in the number and wealth of the nobles, who thus far had been the patrons of art and architecture, and a proportionally greater impoverishment of the masses of the population. For the wherewithal to purchase and the leisure for enjoyment which are the accompaniments of wealth, are essential to the development of an artistic period.



FIG. 10. VENICE, SANTA MARIA DELLA SALUTE.

The Union Special Machine Company's Plant Chicago, Illinois

George C. Nimmons & Co. Architects

WHETHER or not future historians will agree that the invention and development of machinery is the greatest achievement of our times, the opinion, at present, seems to prevail that machinery in its various types and developments has brought about and been responsible for more radical changes in modern civilization than any other agency.

When one considers the great amount of labor formerly required merely to produce the necessary food and clothing of mankind, it seems as if most of their time must have been spent on these things alone. Five hours was the time necessary to harvest a single bushel of wheat; days were spent in weaving the cloth for a single suit, and then more days to sew it. Now the bushel of wheat is harvested in ten minutes and the white bread, which only kings could formerly have on stated occasions, was so plentiful with us before the war that it was given away free with every public meal, even at the most humble restaurant.

The great looms that weave our clothing, and the machines that sew it, do in minutes what it used to take days to accomplish; and so it is with almost everything essential to life: machines do it in a small fraction of the time it originally required.

It was, therefore, by the coming of all of these machines that the people were relieved of devoting a large amount of their time to the procuring of the essentials of life. Yet the disappointing thing about it all is that, when these opportunities came, the people did not originate a custom of dedicating some of this time so saved to their own use, for the purpose of self improvement and lightening the burdens of their own lives.

At any rate, machines are the liberators, as they have already made possible the beginning of such a movement. The invention of still more machines, together with a clearer perception of the great benefits to be so gained may some day, not very far distant, bring about this most desirable reform which would make our industrial workers bigger, stronger, and still better men.

It is a satisfaction, however, to contemplate the various types of wonderful machines. There are those monsters which chew up the hardest of metal, as if it were paper, manifesting a power that is almost beyond conception; and then there are those small, intricate mechanisms that perform their work so accurately and precisely that it can only be measured by a micrometer. But among all the machines there are probably none more delicate and rapid in their execution and few which play a more important part in human life than the sewing machines. From the original simple model, these machines have been so developed that they now do, with lightning rapidity, work which it would seem by inspection could only have been done by human hands.

There are manufacturers who produce a regular standard sewing machine which does plain sewing, with a few attachments added, for domestic use; and then



THE UNION SPECIAL MACHINE COMPANY'S PLANT IN CHICAGO, ILL.
George C. Nimmons & Co., Architects.

there are a few concerns which make a still more interesting product by designing and creating special power-driven machines for the manufacturers of clothing, shoes, tents and the various things to be sewn. Among these is the Union Special Machine Company, whose building is illustrated and described herewith.

Their building is being erected now in sections so as not to disturb the operation of the present plant, and to add to their facilities for producing machines to make soldiers' uniforms, shoes, tents, etc. It occupies the east end of the block between Kinzie street and Austin avenue, fronting on Franklin street, Chicago. Its size is approximately 220 ft. by 150 ft., eight stories and basement high. There is an alley in the centre, spanned by bridges above the first story and connected by tunnels under the alley in the basement. Its construction is of reinforced concrete, with brick and terra cotta veneering.

The architectural problem consisted of designing a machine shop exactly suited to their purposes, in which the processes of manufacture were to be carried on vertically through its eight stories instead of horizontally as is usually the case with a machine shop. The various parts of the machines to be made consist of those plain parts which form the structure of the machines, and then all of the intricate, delicate operating parts which are not permitted to vary from the correct size more than one-fourth of a thousandth to one-tenth of a thousandth of an inch. The most important operations are therefore bench work, or fine machine work connected with the benches, requiring the best of light. On

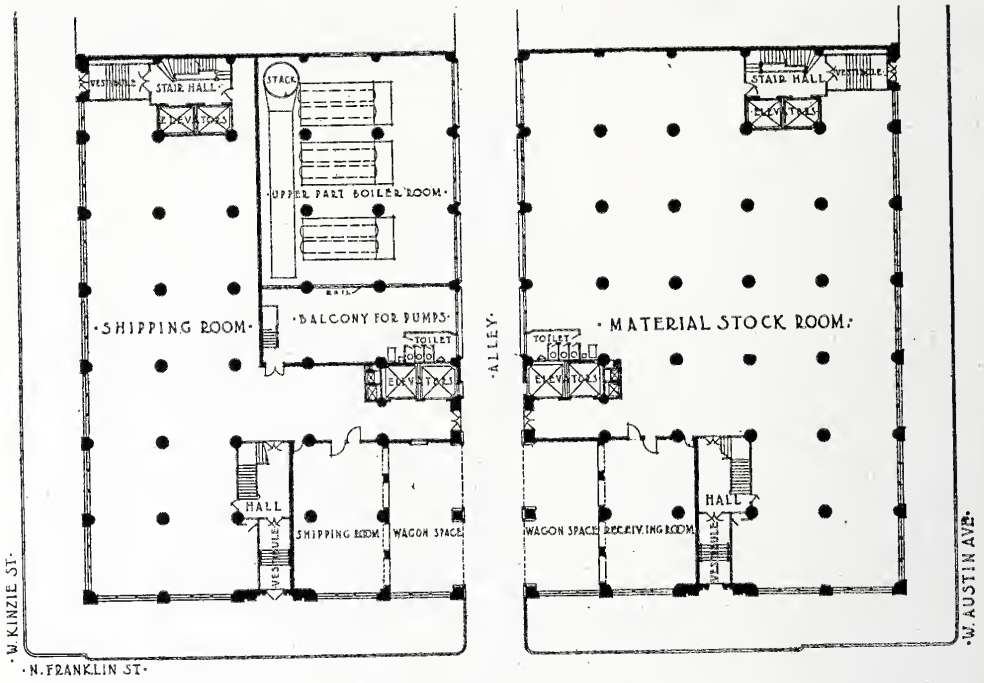
account of this and on account of the relatively small amount of raw material consumed, storage space was not needed so much as the maximum perimeter for outside bench lighting. The plan illustrated was consequently adopted, with the bridge connection where it is, so as to centralize control and supervision and to give access from one section of the building to the other on axial lines that lead into the distributing aisles of each building.

The route which the manufactured product takes is very simple. The raw materials to produce it are taken into the basement and first floor of the north building, and from there they travel up to the top of that building, then across the bridge to the south building and down to the first floor, where they arrive in the shipping room in the form of the completed machines.

Perhaps the most interesting feature of this manufacture is the manner by which the work is carried on and directed in this vertically arranged machine shop.

In the first place, drawings are made of each type of machine and from these a complete model machine is constructed and thoroughly tested out. After it has proved satisfactory, it is taken apart and its parts are used as models by the workmen in filling the order. Of course, the model of every new part made is carefully filed and kept for repeat orders, until the number of different parts now on file are thirty thousand, not counting the stock of duplications of these models which must also be carried. On account of the great number of these parts and the necessity of keeping complete control of them and their models, a central storage and distributing place, called the "Cage," is provided on each machine shop floor, where not only are all these parts kept, but also all the portable tools to make them. The workmen's benches are arranged all around the outside walls of the building under the windows; and when the work starts in the morning, each workman comes to the "cage," gets from the foreman his assignment, which consists of the model to go by, the tools necessary to use and the material of which the parts are to be made. When he completes his work it is returned to the "cage," and there the foreman forwards it on to the assembly room or place where those parts are to be used. These "cages" on each floor must be in direct communication with each other, and they must also be very accessible to the tool room where all these tools are made and repaired and kept in first class working condition. This communication between "cages" and tool room is very important and must be adequate, rapid, and reliable. For this purpose, therefore, three high speed electric dumbwaiters, varying in size from one foot square to four feet, have been arranged for each tier of cages in each building, besides the four freight elevators for the heavier parts. In this way the machines are constructed as they travel on from one stage to another until they finally arrive in the assembling room, where the missing parts are put in. But even here the machines are only two-thirds complete, because the adjusting and testing processes through which they must go require a third more work before they are perfect. After each machine is assembled, a running test of three days at 3,300 stitches per minute is given, and then it is put through an actual test of sewing the various materials it is intended to sew, with all the attachments.

The things which the different machines will do are very interesting. Some will not only sew with a double locked stitch that will not ravel, but they will cut, trim, or fold the material as required while the needles all the time are taking 2,500 to 4,000 stitches a minute; others will make beautiful lace-like ornaments on the edge of a waist or skirt, while they join the parts together or pleat or tuck a lady's garment according to the latest fashion. Most of the machines have two needles, some four, and one very elaborate type twenty-five needles, all working at the same time. But, of course, the all-absorbing work now is that of the machines for the soldiers' uniforms, shoes, underwear, belts, and tents, and also the machines for sand bags for breastworks, and those with the carriers for closing the filled powder



FIRST FLOOR PLAN.
THE UNION SPECIAL MACHINE COMPANY'S PLANT IN CHICAGO, ILL.
George C. Nimmons & Co., Architects.

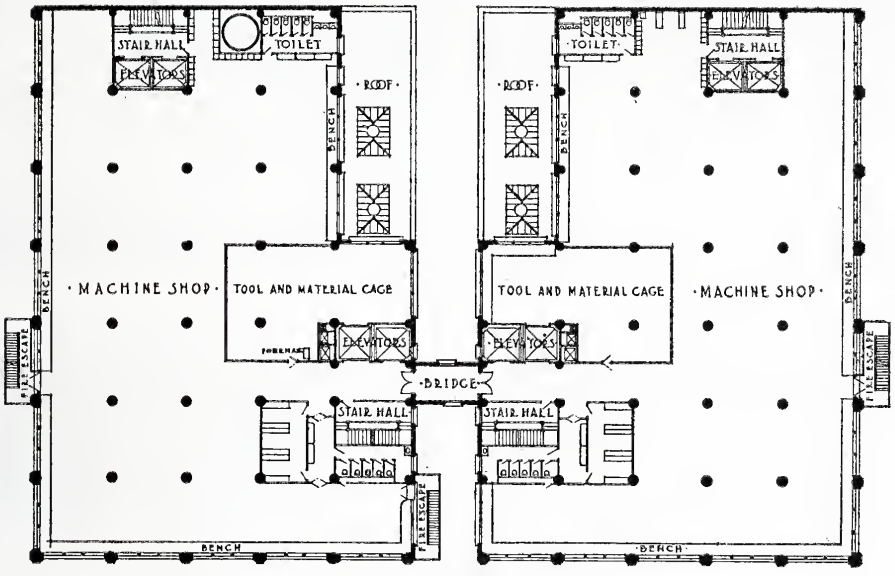
bags. As one sees these machines tried out he cannot help but be impressed with the fact that it was only with the aid of such machines as these that our soldiers could possibly have been provided with clothing in time to enter the war as soon as they did.

The workmen in this machine shop are, of course, necessarily highly trained mechanics, capable of delicate work. They were formerly all men, but now women are being trained to fill the vacancies. The shop throughout is to be clean and sanitary in all its appointments, and the space in the second story of the north building will be given over to recreation, lunch and welfare work of the employees. The main offices will be in the second story of the south building, and the shipping department in the floor below. The power plant, supplying heat, light and power, will be located in the basement, with large coal storage provided.

After one has become familiar with the requirements of such a building, he will find that the demand for light and ventilation is so insistent that his architectural conscience, particularly if he has been well grounded in Ruskin's doctrines, will not allow him, no matter how small they may look, to increase the piers or spandrels one inch beyond their structural necessity.

The problem of design of such a building is more like an elevator cage than it is like any prototype of a building with self-supporting walls and ordinary openings. If war times had not prevented the use of more terra cotta, the piers would have been designed more like vertical ribs and the spandrels like connecting bands.

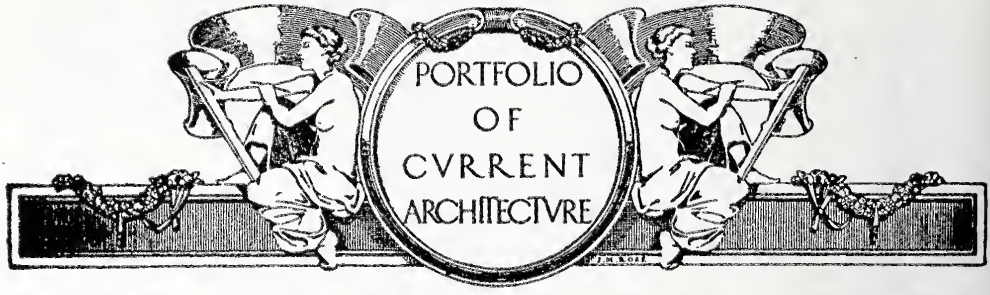
However, the piers are veneered with brick, with beveled jambs, so as to admit the light of the angles, and terra cotta trimmings have been employed to emphasize and embellish the structural features in a simple manner. The windows in this building not only come down to the work bench, but they go below it so as to light the space under the bench and the floor at this point, which is usually placed in shadow.



TYPICAL FLOOR PLAN.
THE UNION SPECIAL MACHINE COMPANY'S PLANT IN CHICAGO, ILL.
George C. Nimmons & Co., Architects.

The main entrance of each building on Franklin street is done in terra cotta, and the elevated water tanks are enclosed in the tower rising from a point near the centre of the building.

When one sums up the great benefits to humanity which the creation and development of an invention like the sewing machine has brought about, it seems as if the building should not only be the best that can be built for the purpose, but that an attempt should be made to have it appear at least attractive in design and thereby endeavor to express in a way the gratitude and appreciation of the people for the drudgery and tiresome labor which the sewing machine has saved them.





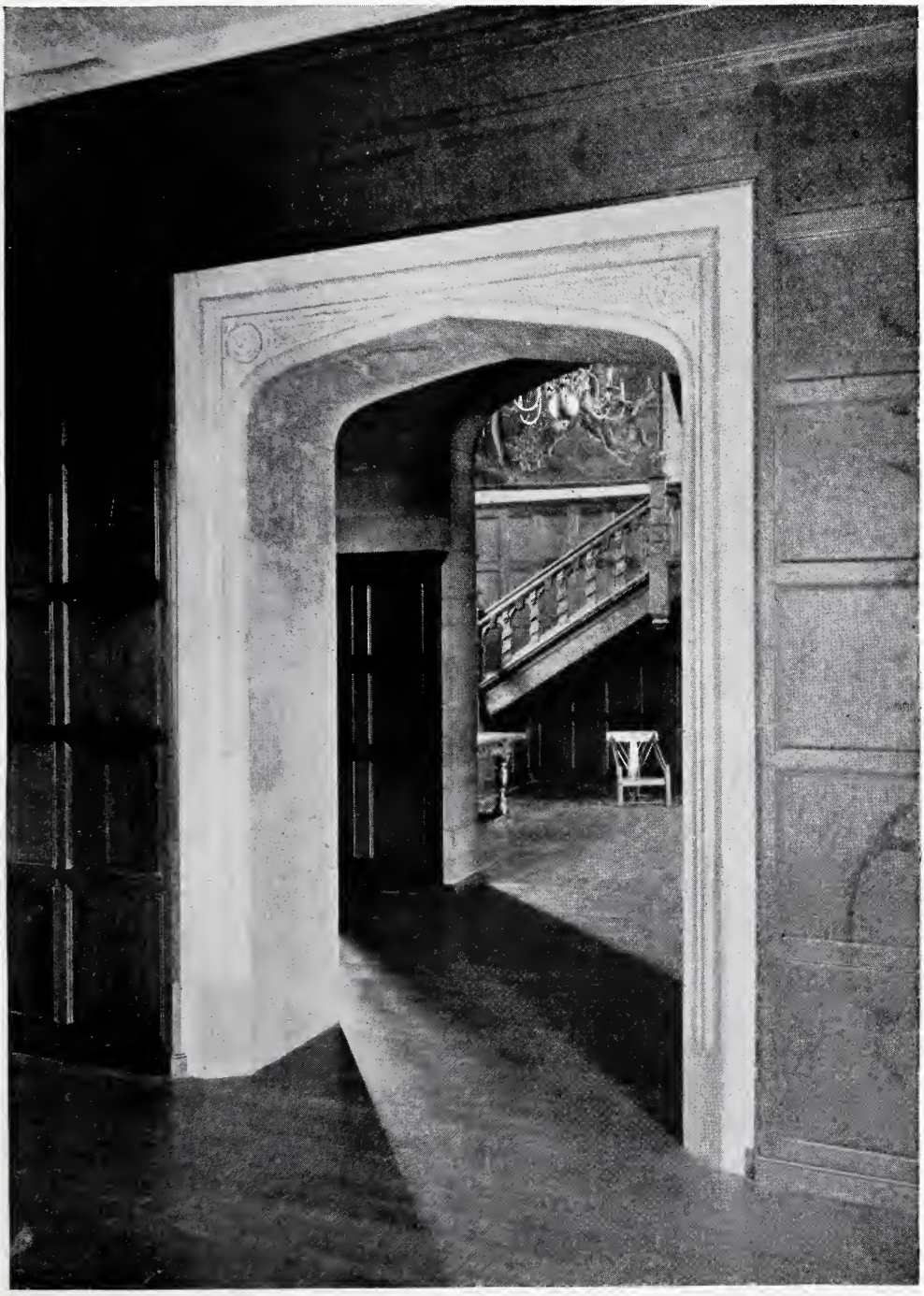
MORNING ROOM—HUNTING HILL, GLEN RIDDLE, PA. HOUSE OF W. M. JEFFORDS, ESQ. WILSON EYRE & McILVAINE, ARCHITECTS.



STAIR HALL—HUNTING HILL, GLEN RIDDLE, PA. HOUSE OF W. M. JEFFORDS, ESQ. WILSON EYRE & McILVAINE, ARCHITECTS.



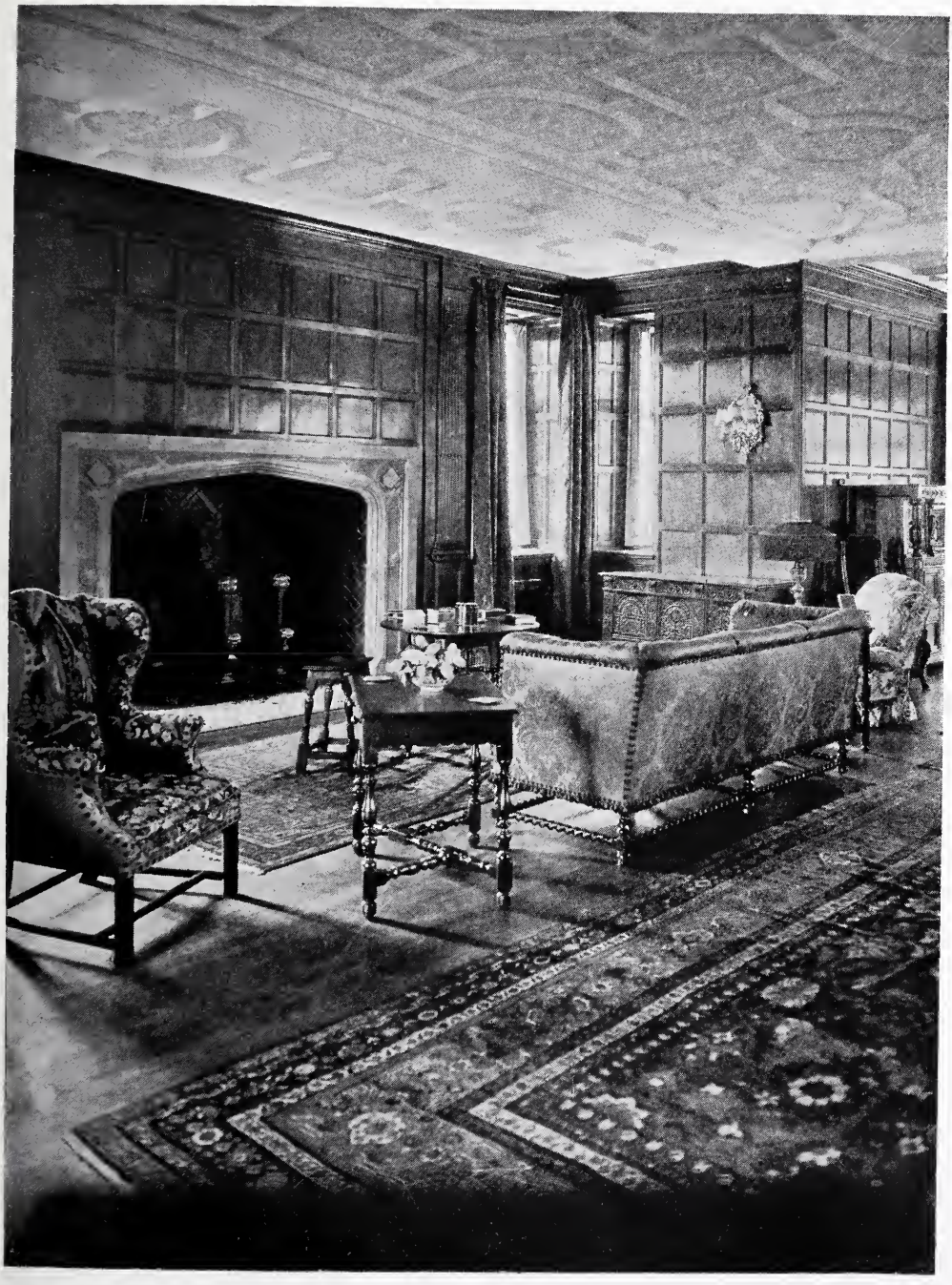
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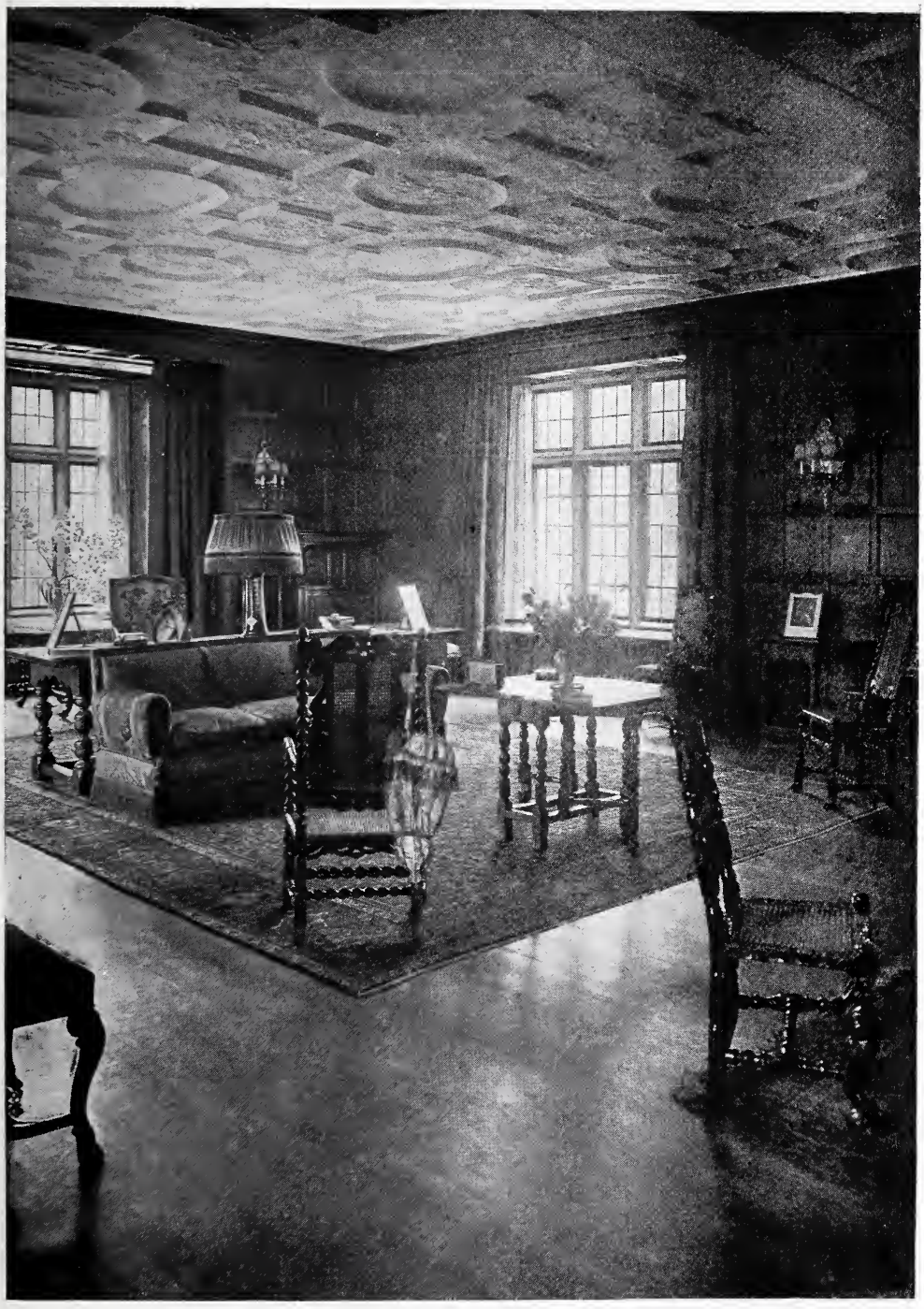
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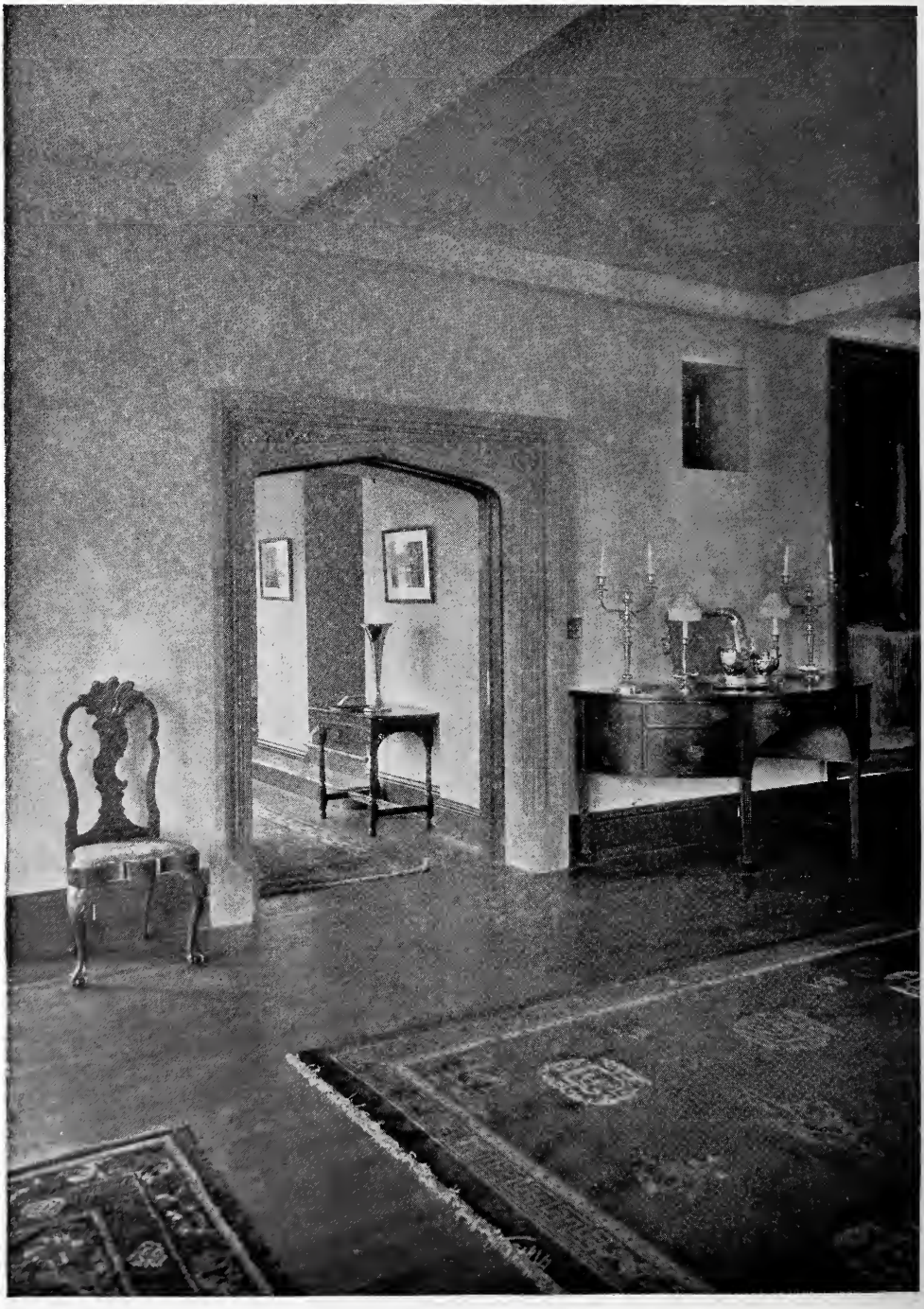
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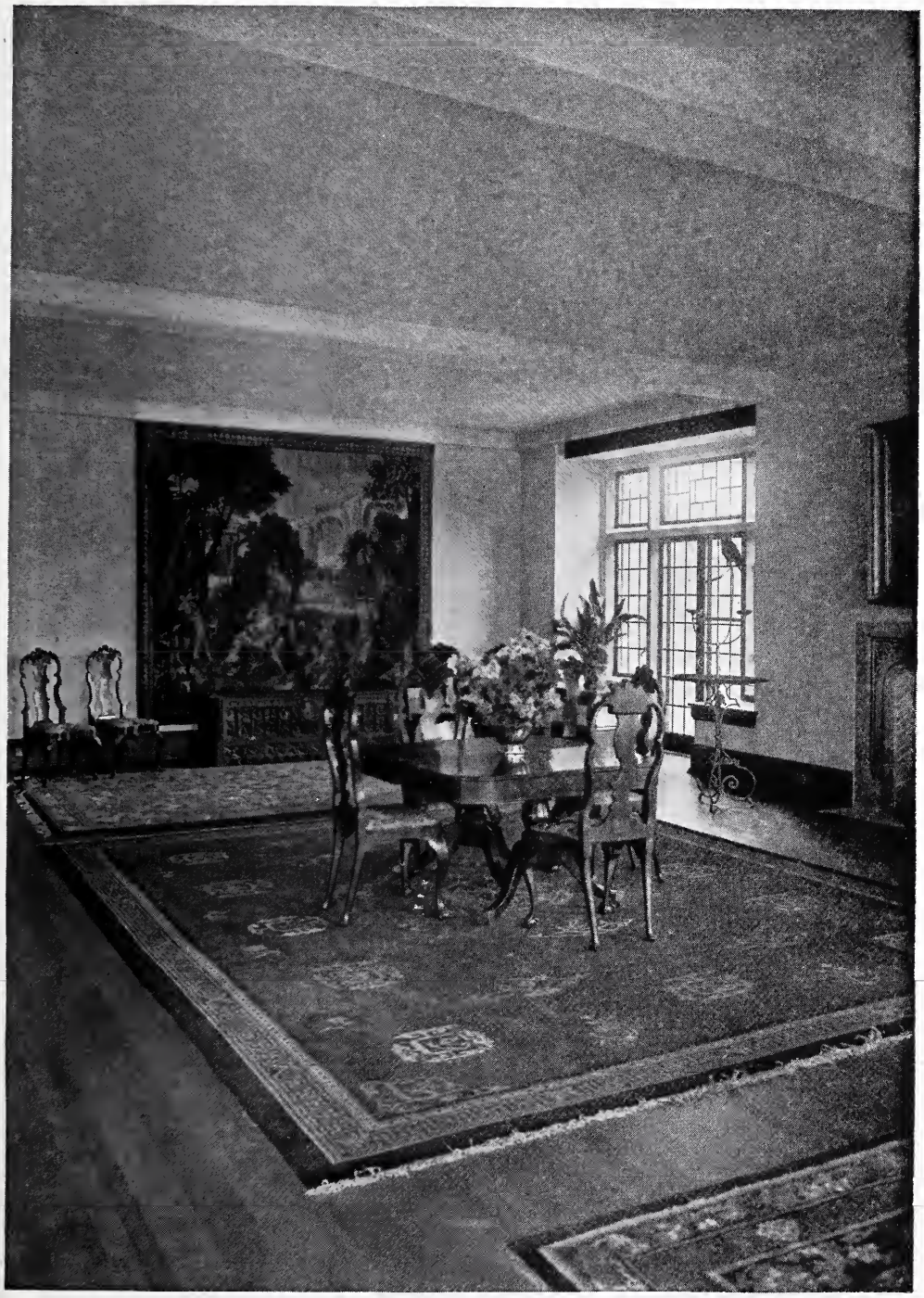
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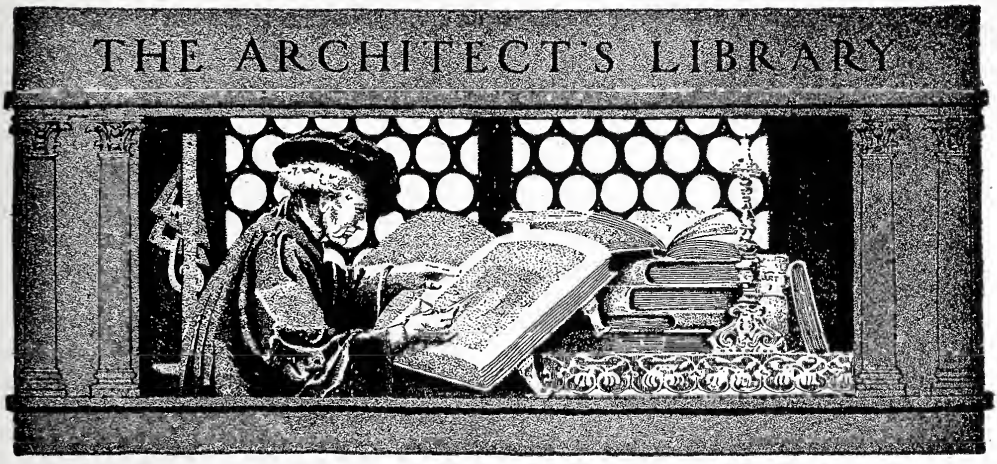
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BOOKS ON COLONIAL ARCHITECTURE

A Review for 1917

By RICHARD F. BACH

Curator, School of Architecture, Columbia University

PART II.

THE bibliography which the following listed and classified titles aim to bring to date for the year 1917 was published in full in the Architectural Record for the months of September, 1915, January, March and August, 1916, February, May, August and September, 1917. The scheme of classifications as given in these issues was based upon a careful survey of the entire field of the literature of the Colonial architecture, including the minor arts, but excluding painting and sculpture as distinct fields, and was arranged with an eye to its immediate utility as a ready source of information as to titles and subject matter. Readers have without doubt noted that the method of arrangement was one calculated to bring together books or articles in accordance with their most direct appeal as to subject matter. In the case of articles in periodicals such classification is a matter of no difficulty whatever, as a rule, for the reason that the space available for a single article is too small to warrant the consideration of subject matter related to more than one field. In the case of books, however, the problem of classification is a much more difficult task, chiefly for the reason that so many books, though bearing definite place names as part of their titles, still treat of buildings of so many different kinds as to make their geographical classification a useless method for our purposes. We do not, in other words, favor the ruthlessness of a numerical system of classification which arbitrarily puts Viollet-le-Duc's separately published article on construction under general building construction, when the initiate is fully aware that its interests are medieval throughout, and that it should therefore, for utility's sake, be put with medieval architecture. Therefore, books of the character above noted appear in the appended lists in the place dictated by their primary interest, and if the interest maintained is sufficiently general, especially as to building type, they have fallen logically in the leading very general or inclusive class. Thus, for instance, Horace Mather Lippincott's *Early Philadelphia, Its People, Life and Progress,* will be found in this general class, while on the other hand, Swepson Earle's *Maryland's Colonial Eastern Shore* falls within the Southern States dwellings class, in

view of its predominant domestic interest.

Classifications that aim to arrange kinds of human interest—and art is one of the chief of human interests—can never be made satisfactory for all concerned, because too many things are known by more than one name, or are felt in more than one way. To be finally good and workable a classification must be distinctly and rigidly arbitrary, else it can never be detailed. But to be humanly interesting a classification must be elastic and allow for the eternal relativity of things, and the degree of allowance it makes is also the degree in which it ceases to be an ideal classification. All of which means that our own Colonial literature classifications are only as good as necessary to be as useful as possible, but not by any means ideal, for then they would have no place in these pages. The ease with which we may be able to classify screws and nails does not apply to books on a formative type of art expressing vividly what may be vaguely termed the "growing pains" of a nation.

* * *

In the appended bibliographical lists will be found in their proper classification all books and articles in the periodicals, having a Colonial subject or direct connection, published during the year 1917. In addition, a number of titles also appear of works published before 1917, but which were issued or discovered after their respective sections of the original or main bibliography had been printed. Since the review articles and the bibliographies went to press at different times, some titles were reviewed but not included in the corresponding sections of the bibliography; such items in all cases appear in their respective classifications in these addenda for 1917.

The following modifications of the original bibliographical arrangement should be noted by those who wish to correct their copies and bring them to date by means of the classified lists to follow. Books on domestic architecture in general are classed under main heading III. This main class is further subdivided into IIIa, works concerning Domestic Architecture in the New England States; IIIb, works concerning Domestic Architecture in the Middle States and IIIc, works concerning Domestic Architecture in the Southern States. As originally published the proper class numbers, because of an oversight, were not printed in full. Thus in the Architectural Record for August, 1916, the letter *a* should be inserted after the class number III. Likewise in the issue for December, 1916, the class number IIIb should be inserted before the caption: Dwellings—Middle States; and the class number IIIc before the caption: Dwellings—Southern States. The works in each of these regional classes are subdivided by arabic numerals into: 1—works covering each region as a whole; 2—works covering separate States; 3—works covering separate cities or localities, or (if needed) individual buildings. To establish the requisite correspondence of numbers, the subclasses of the last two regional groups should be numbered; thus in the Architectural Record for December, 1916, page 582, the caption letters a, b, c, under Dwellings—Middle States, should be replaced by numerals 1, 2, 3. The same applies to Dwellings—Southern States, on the same page, with the further modification that there should be three, instead of two, subdivisions in the classification: Dwellings—Southern States; these subdivisions are then to be entitled as are those for the other two regional classes. This arrangement was not warranted by the material available when the original bibliography for this class was prepared, but recent publications have encouraged the change suggested.

The above indicated modifications will not disarrange the original bibliography as to classes or relative position of titles; they require nothing more than the insertion of two class numbers and the changing of six or seven others, as stated in the preceding.

In the classification of articles from the periodicals exactly the same disposition of subject matter as at first published has been adhered to; the main class, VI, 5, d, has been made to include

also miscellaneous articles not otherwise acounted for and the caption made to read to accord with this extension of the rubric. A section, number VI, 7, has been added so as to make it possible to include the series of reviews of Books on Colonial Architecture as published in the Architectural Record from August 1915, to July 1917, as well as the original sections of the Bibliography of the Literature of Colonial Architecture as published in the Architectural Record from September 1915, to September, 1917.

I. General Works, including also Biographies, Volumes Concerning Churches and Books Treating of Buildings of Varied Types Within a Given Locality.

Bacon, Mrs. Mary D. Old New England Church. Octavo; pp. xxxiv+442, ill. New York; Doubleday, Page and Company; 1906. $3.75.

Denison, Robert C. The United Church on the Green, New Haven, Connecticut. Octavo brochure; pp. 16, unnumbered. New Haven, 1915. Privately published.

De Normandie, James. Three Old Churches. Being one of 12 articles in *The Portsmouth Book.* Quarto; pp. 9 to 16, ill. Boston; Ellis; 1912. No longer available.

Eberlein, Harold Donaldson. The Architecture of Colonial America. Octavo; pp. xiv+289, ill. Boston; Little, Brown and Company; 1915. $2.50.

Embury, Aymar II. Asher Benjamin. A reprint of *The Country Builder's Assistant, The Rudiments of Architecture, The American Builder's Companion, The Practical House Carpenter,* and *Practice of Architecture.* Plates and text selected by Aymar Embury II, architect. Quarto, pp. x+169; pl. numbered according to originals, but foll. regular pagination in reprint. New York; The Architectural Book Publishing Company; 1917. $12.50.

Faris, John T. Old Roads Out of Philadelphia. Octavo; pp. xix+327, with 117 ills. and a map. Philadelphia; The J. B. Lippincott Company; 1917. $4.

Kimball, Fiske. Thomas Jefferson, Architect. Original Designs in the Collection of Thomas Jefferson Coolidge, Junior, with an essay and notes by Fiske Kimball. Folio; pp. vii+205; index, pp. xi; 233 drawings reproduced in heliogravure. Boston, printed for private distribution at The Riverside Press, Cambridge; 1916. Few copies to be had from Houghton, Mifflin and Company, New York and Boston, at $25.

Whitney, F. A. Historical Sketch of the Old Church, Quincy, Mass. Octavo; pp. 17, ill. Albany; Munsell; 1864. No longer available.

II. Works Concerning Public and Secular Buildings, other than Dwellings; (including also a few Regional Works of Historic Interest).

The Capitol of Massachusetts, showing the enlargement erected in 1853 and 1854. Gridley J. F. Bryant, Architect. A series of four elevations, six sections, seven plans, no text, bd. in octavo form at the Avery Architectural Library, Columbia University, New York, under number AH 73; M 38. Origin not recorded.

King, David. An Historical Sketch of the Redwood Library and Athenaeum in Newport, Rhode Island. Octavo brochure; pp. 53. Boston; John Wilson and Sons; 1860. No longer available.

King, David. An Historical Sketch of The Redwood Library and Athenaeum in Newport, Rhode Island. Octavo brochure; pp. 12. Providence; Providence Press Company; 1876. No longer available.

Lippincott, Horace Mather. Early Philadelphia, Its People, Life and Progress. With a photogravure frontispiece by Charles H. Stevens and 119 ills., from photos and prints. Octavo; pp. 340, ill. Philadelphia; J. B. Lippincott Company; 1917. $6.

Stanard, Mary, Newton. Colonial Virginia, Its People, Life and Customs. Octavo; pp. xvi+376, ill. Philadelphia, J. B. Lippincott and Company; 1917. $6.

Latrobe, B. Henry. A private letter to the individual members of Congress on the subject of the Public Buildings of the United States at Washington, from B. Henry Latrobe, Surveyor of the Public Buildings. Octavo; pp. 32 and 1 plan. Washington City; Samuel H. Smith; 1806. No longer available.

Newlands, Francis G. The White House Restoration. Compensation of Architects. Remarks of Hon. Francis G. Newlands, of Nevada, in the Senate of the United States, Feb. 29 and Mar. 21, 1904. Octavo brochure; pp. 31. Washington; Government Printing Office; 1904.

Preservation and Restoration of City Hall, (Hartford, Conn.,) being Bulletin No. 6 of the publications of The Municipal Art Society of Hartford, Conn. Octavo brochure; pp. 16, ill. Hartford, Conn., published by the Society; 1906.

Scattergood, David. Handbook of the State House at Philadelphia. Duodecimo; pp. 64, ill. Philadelphia; published by the author; 1890. $.25. No longer available

III. Works concerning Domestic Architecture—General Historical and Popular Books, (including also Accurate Architectural Works and Volumes of Photographs and Measured Drawings, Covering the Subject at Large).

Book of a Hundred Houses. A Collection of Pictures, Plans and Suggestions for Householders. Square octavo; pp. vi+403, ill. Chicago; Herbert S. Stone and Company; 1902. $1.75.

McQuade, Walter. Measured Drawings of New York City Hall, "Architecture" Series of Measured Details, in *Architecture,* vol. 35, no. 1, Jan., 1917, plate 1; no. 2, Feb., pl. 15; no. 3, Mar., pl. 33; no. 4, Apr., pl. 52; vol. 36, no. 1, July, 1917; pl. 109.

Millar, Donald. Measured Drawings of Some Colonial and Georgian Houses. Folio; 2 vols.: (1) pp. 6 and 40 pl. (2) pp. 4 and pl. 44 to 80. New York. The Architectural Book Publishing Company; 1916. $25.

a. Works Concerning Domestic Architecture in the New England States.

1. Covering the region as a whole.

Old Brick Houses of New England. Small quarto brochure; pp. 55, ill. Boston; Rogers and Manson Company; 1917. $1.

2. Covering Separate States.

No additions.

3. Covering Separate Cities or Localities or Individual Buildings.

Northend, Mary Harrod. Memories of Old Salem. Octavo; pp. 341, ill. New York; Moffatt, Yard and Company, 1917. $4.

b. Works Concerning Domestic Architecture in the Middle States.

1. Covering the Region as a Whole.

No additions.

Note: See introductory statement in corresponding place in original bibliography, The Architectural Record, v. 40, No. 6; Dec., 1916; p. 582.

2. Concerning Separate States.

Mills, W. Jay. Historic Houses of New Jersey, with numerous photogravure illustrations from drawings by John Rae and from photographs and rare prints. Crown octavo; pp. 15+348, 19 pl. Philadelphia; The J. B. Lippincott Company; 1902. $5.

3. Covering Separate Cities or Localities or Individual Buildings.

Dean, Bashford and Welch, Alexander McMillan. The Dyckman House, built about 1783, restored and presented to the City of New York in MCMXVI. Octavo brochure; pp. 47, ill. New York; privately printed; 1916.

Gerard, James W. The Old Dutch Streets under the Dutch. A paper read before the New York Historical Society, June 2, 1874. Octavo brochure; pp. 52. New York; F. B. Patterson; 1875. No longer available.

Shelton, William Henry. The Jumel Mansion, being a full history of the House on Harlem Heights built by Roger Morris before the Revolution, together with some account of its more notable occupants; with illustrations. Small Quarto; pp. xii+257, ill. Boston; Houghton, Mifflin and Company; 1916. $10.

c. Works Concerning Domestic Architecture in the Southern States.

1. Covering the region as a whole.

No additions.

2. Covering Separate States.

Earle, Swepson, and Skirven, Percy G., editors. Maryland's Colonial Eastern Shore, Historical Sketches of Counties and of Some Notable Structures. Crown Octavo; pp. xix+204, ill. Baltimore; Munder, Thomsen Press; 1916. $3.50.

3. Covering Separate Cities or Localities, or Individual Buildings.

Smith, Alice R. Huger and Smith, D. E. Huger. The Dwelling Houses of Charleston, South Carolina, with 128 ills., from drawings by Alice R. Huger Smith, photos and architectural drawings by Albert Simons. Octavo; pp. 387, ill. Philadelphia; The J. B. Lippincott Company. 1917; $6.

IV. Volumes Relating to the Minor Arts* (excl. Furniture and Furnishings).

*Note: The references in this section concerning the various minor arts, as was stated when this bibliography was first undertaken, must necessarily remain incomplete, chiefly because of the somewhat popular character of many publications in this field.

1. General Works.

Kent, Henry Watson; Valentiner, W. K., and Levy, Florence N. The Hudson-Hulton Collection; Catalogue of an Exhibition of American Paintings, Furniture, Silver and other objects of art: MDCXXV—MDCCCXXV. Quarto; 2 vols; (1) pp. xliii+162, ill.; (2) pp. xvi+160, ill. New York; Metropolitan Museum of Art; 1909. $10.

2. Glassware.

No additions.

3. Metal.

Bigelow, Francis Hill. Historic Silver of the Colonies and Its Makers. Octavo; pp. xxvi+476, ill. New York; The Macmillan Company; 1917. $6.

Elwell, N. W. Colonial Silverware of the 17th and 18th Centuries, comprising solid sets, small wares, candelabras, communion services, etc., compiled and photographed by N. W. Elwell. Folio; no text, 39 pl. Boston; Geo. H. Polley and Co.; 1899.

Silver Used in New York, New Jersey and the South; Catalog of an Exhibition at the Metropolitan Museum of Art, with a note on Early New York Silversmiths by N. T. Haines Halsey. Octavo; pp. xxxvi+97, ill. New York; Metropolitan Museum of Art, 1911. $0.25.

4. Pottery.

No additions.

V. Furniture and Furnishings.

1. General Works.*

No additions.

2. Volumes composed wholly or chief- of Photographs.

No additions.

3. Volumes of Measured Drawings.

No additions.

4. Volumes concerning Individual Furniture Types or the Work of Individual Craftsmen.

Ware, William Rotch, editor. Seats of the Colonists and Other Furnishings, ill. largely with measured drawings by H. C. Dunham. Text by William B. Bigelow, Horace C. Dunham and R. Davis Benn. Folio; pp. 24 and 28 pl. New York; American Architect Co. (U. P. C. Book Co.); 1904. $5.

*Note: In the original bibliography this section, as first printed in The Architectural Record, vol. 41, No. 5; May, 1917; page 472, had the added caption: "incl. a few works on interior decoration and on periods." In the Addenda for 1917, the Colonial field proper has been closely adhered to and any other works of such general character excluded.

VI. Articles in the Periodicals.

Note: It is obvious that in the preparation of this section, not voluminous completeness, but rather decided interest has served as guide for the selection of material. It should also be stated that since our chief interest is architectural, or at least has to do with arts allied to architecture, certain aspects of the minor arts have not been covered in the appended lists. This applies especially to textiles, tableware and the like. See also explanation of method of selection in The Architectural Record, vol. 42, no. 1; July, 1917; page 89.

1. General Articles.

Farr, Albert. A Return to the Colonial, in *The Architect and Engineer of California*, vol. 51, no. 2; Nov., 1917; pp. 38-59, ill.

2. Churches.

No additions.

3. Public and other Secular Buildings (excl. Dwellings).

A Colonial Lodge Building at Aurora, New York, with measured drawings by Benjamin F. Betts, in *The Architectural Review*, vol. 5, no. 8; Aug., 1917; p. 172, and pl. 49 to 54.

Dykeman, J. L. The Lancaster School, Albany, N. Y., in *Architecture*, vol. 36, no. 6; Dec., 1917; pp. 245-246, ill.

Howard, James Q. The Architects of the American Capitol, in *The International Review*, vol. 1, no. 6; Nov., 1874; pp. 736-753.

Schuyler, Montgomery. The New York City Hall, a Piece of Architectural History, in *The Architectural Record*, vol. 23, no. 5; May, 1908; pp. 387-390, ill.

Schuyler, Montgomery. The New White House, in *The Architectural Record*, vol. 13, no. 4; April, 1903; pp. 358-388, ill.

Who Was the Architect of the United States Capitol? in *Architecture*, vol. 36, no. 1; July, 1917; pp. 138-139.

4—Domestic Buildings.

a. Dwellings in the New England States.

Brooks, Arthur C. The Old Time House, in *The Art World*, vol. 3, no. 1; Oct., 1917; pp. 63-65, ill.

Society for the Preservation of New England Antiquities, Bulletin. Many short articles and illustrations too brief to be separately listed.

"The Thimbles," Ipswich, Mass., in *The House Beautiful*, vol. 42, no. 3; Aug., 1917; pp. 150-151, ill.

b. Dwellings in the Middle States.

Dykeman, J. L. Three Albany Doorways, measured and drawn by J. L. D. in *Architecture*, vol. 35, no 4; Apr., 1917; plates 71, 72.

Haddon, Rawson Woodman. The Roger Morris House (Jumel Mansion) New York City, with measured drawings by Joseph Palle, in *The Architectural Record*, vol. 42, no. 1-2; July and Aug., 1917; pp. 46-62, 126-139, ill.

Micklewright, Albert E. Early Architecture of New Jersey, in *Architecture*, vol. 35, no. 1, Jan., 1917; page 18 and 26; no. 2, Feb., plates 31, 32; no. 3, Mar., plates 36, 37; no. 4, Apr., plates 69, 70; no. 5, May plates 90, 91; no. 6, June, plates 93, 94; vol. 36, no. 1; July, 1917; plates 112, 113; no. 2, Aug., plates 141, 142; no. 3, Sept. plate 160; no. 4, Oct., plate 180; no. 5, Nov., plate 195. All measured drawings.

Rose, Christina Levinston. An Unknown Colonial Type, in *Country Life in America*, vol. 32, no. 2; June, 1917; pp. 67-69, ill.

c. Dwellings in the Southern States.

Keister, J. L., Munson, O. J., and Weber, J. A. Early Architecture of Virginia, in *Architecture*, vol. 35, no. 3, 5; Mar., May, 1917; plates 34, 35, 88, 89; vol. 36, no. 1, 3, 4; July, Sept., Oct., 1917; plates 90, 91, 161, 179; all measured drawings.

Keister, J. L., and Munson, O. J. Early Architecture of Maryland, in *Architecture*, vol. 36, no. 5; Nov., 1917; pl. 94.

5. Architectural Details and Minor Arts.

a. Doors, Doorways, Mantels, Windows, etc.

Buckler, Riggin; Cunningham, H. F.; Dyer, W. A.; Keister, J. L.; Kelley, J. Frederick; Munson, O. J.; Robb, G., and Weber, J. A., The "Architectural Forum" Collection of Early American Architectural Details, in *The Brickbuilder* (continued as *The Architectural Forum*), vol. 24, no. 1-12, Jan.-Dec., 1915, pl. 1 to 12; vol. 25, no. 1-12, pl. 13-35; vol. 26, no. 1-6, 10, 11, pl. 36-45.

Cousins, Frank and Riley, Phil M. Six Old Salem Doorways, in *The Architectural Record*, vol. 42, no. 4; Oct., 1917; pp. 393-399, ill.

Minor Colonial Details. Part 1. Some Old "Summer Houses" from Eastern Massachusetts Gardens. In *The Architectural*

Review, vol. 5, no. 8; Aug., 1917; pp. 169-171, ill.

Three Old Deerfield Fireplaces, belonging to the latter half of the Eighteenth Century. Photographs by Frances and Mary Allen. In *The Architectural Review;* vol. 5, no. 6; June, 1917; p. 113, ill.

b. Fences, Brickwork, etc.

No additions.

c. Metal Work.

No additions.

d. Furniture, Wall Papers, Silver, Pottery and Miscellaneous.

Bogan, Helen Dean. Old Pictorial Wall Papers, in *Country Life in America,* vol. 32, no. 3; July, 1917; pp. 48-50, ill.

Boyd, John Taylor, Jr. Some Examples of Colonial Lettering, in *The Architectural Record,* vol. 40, no. 6; Dec., 1916 pp. 588-590, ill.

6. Biographical.

Gallagher, Mrs. Austin. Robert Mills, Architect and Engineer, in *The Architectural Record,* vol. 40, no. 6; Dec., 1916; pp. 584-588, ill.

7. Bibliographical.

Bach, Richard F. A Bibliography of the Literature of Colonial Architecture, in *The Architectural Record,* vol. 38, no. 3; Sept., 1915; pp. 382; vol. 39, no. 1 and 3; Jan. and Mar., 1916; pp. 92-93, and 388-389; vol. 40, no. 2; Aug., 1916; pp. 188-189 and 582-583; vol. 41, no. 2 and 5; Feb. and May, 1917; p. 189; vol. 42, no. 1: July, 1917; pp. 89-91, vol. 42, no. 2 and 3; Aug. and Sept., 1917; pp. 185-8, 283-4.

Bach, Richard F. Books on Colonial Architecture, in *The Architectural Record,* vol. 38, no. 2, 3, 5, 6; Aug., Sept., Nov., Dec., 1915; pp. 281-286; 379-382, 592-594, 690-693; vol. 39, no. 1, 2, 3, 4, 6; Jan., Feb., March, April, June, 1916; pp. 89-92, 186-190, 292-294, 384-388, 568-574; vol. 40, no. 1, 2, 3, 5, 6; July, Aug., Sept., Nov., Dec., 1916 pp. 89-92, 185-187, 279 281, 493-494, 578-580; vol. 41, no. 1, 2, 3, 4, 5, 6; Jan. to June, 1917; pp. 84-87, 187-188, 373-374, 566-571; vol. 42, no. 1; July, 1917; pp. 88-89.

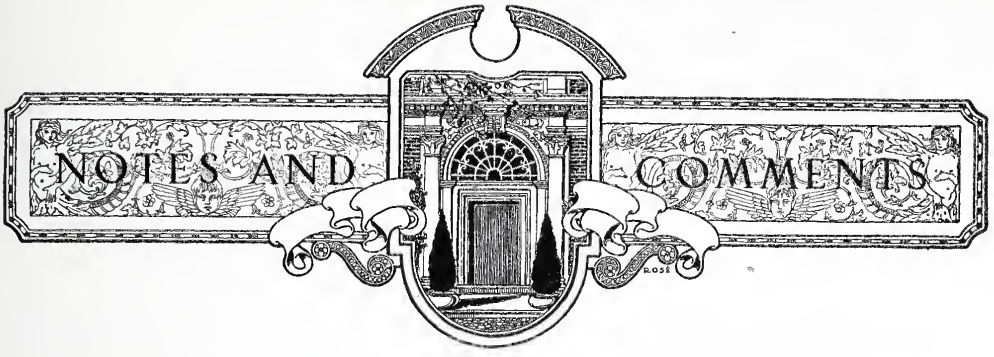
Bach, Richard F. A Bibliography of the Literature of Colonial Architecture, addenda to close of 1917, in *The Architectural Record,* vol. 44, no. 2; Aug. 1918; pp. 175.

Bach, Richard F. Books on Colonial Architecture, addenda for 1917, in *The Architectural Record,* vol. 44, no. 1; July 1918; pp. 85.

* * *

To our original list of Dealers in Photographs of Colonial Architecture, published in the Architectural Record for September, 1917, on pages 283-284, should be added the following item:

Boston Photo News Company, 114 State Street, Boston, Mass. Subjects: houses, general Massachusetts, but chiefly Salem; also details, doors and doorways, knockers, etc. Sizes: 8 inches by 10 inches. Prices: 50 cents each, provided in either flexible or heavy paper filing weight at same figure. Will send photographs on approval for selection to architects and students of architecture on receipt of deposit. No catalog.



Architecture Nationalized by the War.

It is well for architects to remark the fundamental changes which war threatens to enforce on their profession. It is true that we are only in the early stages of this revolution, if revolution it be, and we shall hardly find it profitable — though doubtless diverting enough—to attempt to settle our destiny ahead of time. The chief necessity is rather to acknowledge the fact of change, be alert to its different turns, and strive to mold the profession to the country's best advantage.

Is it clear that the majority of architects have realized even the changes that have already occurred? Perhaps some architects are too absorbed in the war itself to think much about architecture. Others doubtless take a matter-of-fact point of view and simply feel that their business is bound to be stagnant until peace is signed, that there is nothing to do but to await that happy day when they may hope to resume their practice where they left it off.

But can this be done? When the industries and the great services of the nation are coming under the hand of Government, is it possible for building to escape the fate of iron, coal, oil, wool and food? Where the building industry goes, architecture must follow. In most parts of the country no great building operation may be undertaken without the consent, tacit or approved, of the war authorities. Throughout the war the building industries will have to obey the law that materials, labor and transportation must fulfill the needs of war before they can satisfy private interests.

Thus architecture must take its place in the colossal organization. Their organization will tend to perpetuate itself and it is certain that the lasting of it apart at the end of the war will be as difficult as it was to put it together. It has already laid hold of many architects. Some have gone into the Army, to learn another profession; others are in the service of the Government, struggling with the huge problems of military and national construction. The former will return to their work with a new point of view, the latter with a vaster outlook, civic rather than merely professional. Each will wish to establish their profession on a more national basis; in other words, will desire to see architects work more for the community instead of simply for the pleasure of individuals. They will not desire architecture to escape the duties of the other professions. Chemistry and engineering and medicine are already well harnessed in the country's service. In medicine, thousands more will follow the 22,000 physicians already in the Army and the Navy, among them the leaders of their profession. The British have been obliged practically to nationalize the profession of medicine. With the demands of the great army at the front, and the need to replace constant losses, there are but few doctors left for the civil population of the British Empire, and the Empire naturally demands that those still left in "private" capacity shall give some heed to the demands of the public for service. The United States has not yet arrived at this situation concerning medicine, but certain changes already have occurred. In the camps the ablest physicians are at the disposal of the pick of all ranks and serve for slight pay. Formerly the leaders of the medical profession were somewhat a luxury for the rich or well-to-do, despite the generous giving of their time in free clinics and dispensaries; but now they are glad to serve all alike and are enthusiastic at the opportunity of building up the health

of all the people, for that is what service in the army means. Many of them hope that the medical service furnished to that part of the populace that is in the army may be extended to the whole country after the war.

Architects should welcome a similar change. They should look forward to a day when their services would be imperative in a community, not only for schools or city planning or parks, as at present, but for all construction, public or private. Only then will they realize their fullest possibilities and only then will a truly national style of American architecture arise.

JOHN TAYLOR BOYD, JR.

State Registration of Architects and Columbia University.

Like many another undertaking aiming at public improvement, the law requiring state registration of architects puts the burden of making good the improvement largely—and, in the majority of cases, quite squarely—upon the shoulders of that particular portion of the public which, in the instance in question, is most directly affected. Since May 4, 1917, only persons registered as architects under the laws of New York have been permitted to engage in the independent professional practice of architecture. Needless to say, while the law aimed at large calibre results—that is, in accordance with the plans of its projectors—the actual accomplishment has been chiefly in the form of a hair-splitting application of the title "Architect." The public is still at liberty to engage an architectural draftsman, an architectural designer, an architectural builder, or any other type of person qualified by the same adjective in completing its buildings; for, unfortunately, the large and gullible public has not yet been educated to the point of understanding that the initials R. A., signifying Registered Architect, might really connote a definite attainment in the profession tantamount in significance to the letters M. D. so far as the standard of professional service rendered is concerned. To be exact the law provides as follows: Any person residing in, or having a place of business in, the state who, before this article takes effect, shall not have been engaged in the practice of architecture in New York State under the title of architect shall, before being styled or known as an architect, secure a certificate of his qualifications to practice under the title of architect, as provided by this article.

So important a regulation, having been once granted the effectiveness of the legal status, immediately demands the attention of the professional schools. In so far as the curricula of such professional schools within the state are already accepted as of suitable standard by the State Board of Examiners and Registration of Architects the law is, of course, adequately accounted for, because this board accepts graduation from such a standard course of instruction in lieu of the examinations required of candidates for state registration. There is, however, another field in which especially the university in a large city is called upon to meet the provisions of such a law. This educational field is that represented by the large number of persons who cannot afford to devote the daylight hours to their own educational advance, and therefore seek employment during those hours and attend evening courses of instruction.

There were available to aspiring "architects," who must now and henceforth be content to be known as nothing more than draftsmen, no adequate means of obtaining the requisite training leading to the diploma of graduation from an approved architectural school, as required by the law, unless they could muster the necessary funds to attend a regular course of instruction for four years. The problem was further complicated by the fact that an increasing number of schools, such as Columbia, California and Harvard, now require six years' attendance in a combined academic and professional course before the degree of Bachelor of Architecture is awarded.

In Columbia a comprehensive system of evening courses known as Extension Teaching has long been available. A number of such courses, devoted especially to architecture, had already been offered for upward of ten years. When the state registration law went into effect the university met the need for specialized and systematic instruction, which this law created by the establishment of a complete curriculum leading to a Certificate of Proficiency in Architecture. This curriculum is equivalent in scope, character and difficulty of the purely professional part of the day course leading to the degree in architecture. Furthermore, this Certificate of Proficiency is accepted by the state in lieu of the examinations required of candidates for state registration.

All work in this certificate course is given in the evening and Saturday hours, so that it becomes possible for the first

time in this country for a draftsman to combine his professional practice with his professional instruction. To be sure the attendance upon such evening courses, owing to the small number of hours available each day, must be extended for a period of at least six years before all the required work has been completed. But it should be borne in mind that during this period the candidate regularly earns his salary and constantly improves himself from the distinctly practical point of view by uninterrupted office experience.

For admission to this course high school graduation is required. Students must be eighteen years of age. In the case of students who have not completed the high school course an arrangement may be made whereby they may complete such part of their secondary education as they may have missed, also by Extension Teaching courses. When the necessary qualifications are at hand such students are given the opportunity to begin upon their architectural work as special students in the architectural branch pending the completion of the required instruction of high school grade.

When it is borne in mind that the administration of these evening courses falls entirely within the control of the regular administration of the day courses, subject to the same regulations as to standards of scholarship maintained and profiting by the same extensive equipment, it will be seen that the draftsmen of Greater New York and its immediate vicinity have been offered an opportunity of improving themselves the like of which have been extended to but few professions.

The establishment of this course of instruction by Columbia University is a signal advance in architectural education. It is, furthermore, a direct indication of the responsive character of large American universities, which have, so far as their professional schools are concerned, been accused too often of a lack of adaptability to existing circumstances and the demands of the time.

RICHARD F. BACH.

Conservation of Architecture.

With the destruction of architectural monuments going on so relentlessly in Europe there must be evident to the architectural profession the necessity for preserving more complete records of those which remain.

All works of art, whatever their nature, are subject to destruction, whether it be at the hands of war-mad Huns, as the result of fire, or the slower but equally destructive action of time and the elements. Priceless architectural treasures are constantly slipping from us, and with the loss of each the world of art is rendered that much the poorer. In France the losses due to the fanaticism of the French Revolution, more than a century ago, and the hatred of the Teuton invaders of today have been incalculable, and much that has been destroyed is probably lost irretrievably, owing to the lack of adequate photographs, measured drawings, or better still, of casts to serve as enduring records.

In the Trocadero of Paris is gathered together a vast collection of architectural casts. The Metropolitan of New York has followed this example, and others have to a greater or less degree recognized the desirability of preserving replicas of the world's architectural masterpieces, but it is quite conceivable that disaster might destroy any or all of these few great collections as well as the originals from which the casts were taken.

When one considers how precarious is the existence of these architectural treasures and how easily they may be destroyed, it would seem not merely a desirable thing, but a positive duty, that adequate records of them be preserved. In pursuance of this idea, it would be most desirable that great Museums of Comparative Architecture be established in various parts of the world, so separated as to assure the impossibility of their being all destroyed however great the cataclysm that may come.

The combined resources of such a group of institutions would make possible the securing of a mass of records which no single institution could afford, and if, moreover, the cooperation of art museums everywhere were to be enlisted, a marvelous work could be accomplished and the cost so minimized that the lesser institutions would be able to avail themselves of collections that would be otherwise entirely beyond their means.

Such a movement for the preservation of records of the world's masterpieces would soon attract widespread attention and would accomplish not only the immediate object, but would also tend to awaken an increased popular interest in the subject of architecture.

I. T. FRARY.

National Federation of Building Industries.

The convention of the building industries of the United States, held in Atlantic City on July 15 and 16, marks perhaps a turning point in economic war history. It promises, on the one hand, to coordinate the knowledge of this highly specialized and varied industry with its changing conditions in different parts of the United States, and, on the other hand, it promises to coordinate the knowledge of the authorities under which the industry is working. Each department of the Government may have the benefit of the accumulated knowledge gained by all other departments, as well as the knowledge accumulated by all branches of the industry, and any action taken affecting this industry (which employs perhaps a million and a half men, has perhaps two thousand million capital invested and produces three thousand million dollars annually) may, therefore, be advisedly taken.

This well conceived action by the building industry at this critical time is important to the nation because the condition of the building industry not only affects the human problem of housing, but indirectly affects the cost of all necessities of life, and depression in the building industry is likely to be followed by depression in the real estate market and a financial depression of the country at large.

About three hundred representatives from all parts of the United States attended the convention. The delegates from local and national associations formed themselves into a central War Service Committee, each unit of which may be members of the War Service Committee of that particular branch of that particular industry, so that the central committee will be a clearing house of the War Service Committee of each industry.

The industry is very fortunate in the personnel of its Executive Board, and of its officials, representing as they do, the best brains and experience of the industry and geographically distributed throughout the country:

President, Ernest T. Trigg, President of John Lucas & Co., Inc., Philadelphia, President of the Philadelphia Chamber of Commerce, Director in the Chamber of Commerce of the United States of America, and Advisor for the Fourth District of the Resources and Conversion Section of the War Industries Board; Vice-President, Walter S. Dickey, of Kansas City, Mo., a manufacturer of clay products, and a member of the Inland Waterways Commission; Treasurer, A. M. Maddock, President of Thos. Maddock's Sons Co., Trenton, a member of the National Committee of Confederated Plumbing Manufacturers and Dealers.

B. F. Affleck, Chicago, President of the Portland Cement Association, also President of the Universal Portland Cement Company.

Colonel J. R. Wiggins, Philadelphia, President of the National Association of Builders' Exchanges.

John L. Kaul, Birmingham, Ala., a member of the Southern Pine Association.

Charles Gompertz, San Francisco, Cal., President of the Building Industries Association of San Francisco, and representing the General Contractors' Associations of Los Angeles, Seattle, Tacoma, Oakland, Portland, and San Jose.

John A. Kling, Cleveland, Ohio, former President of the National Builders' Supply Association, and at present President of the Cleveland Builders' Supply Association, largely interested in lime manufacture.

Rudolph P. Miller, New York, of the Engineering Council and Mechanical Electric Mining Engineers, with a membership of about thirty-eight thousand. He was four years the Superintendent of Buildings of the City of New York, and the author, practically, of the present New York building code.

The spirit of the convention was entirely devoid of individual or trade self-seeking, and was exemplified in the following telegram sent to President Wilson:

July 15, 1918.

Honorable Woodrow Wilson,
President of the United States,
Washington, D. C.

Representatives of the various branches of the building industry, gathered from all parts of the country at the summons of the Chamber of Commerce of the United States, send you fervent good wishes for the completion of the task of bestowing upon the world a permanent peace.

We are glad to bear our share of the burden of the war for liberty and shall cheerfully accept whatever sacrifices and readjustments may be essential to its vigorous prosecution.

The government has a perplexing problem in the endeavor to restrict construction activities where necessary, while keeping employed labor and materials not needed for war purposes.

To solve that problem successfully in an industry of such magnitude, such ramifications and such large influence on general trade and prosperity will immeasurably strengthen the nation for the support of taxation and loans which must continue as long as the war lasts.

We are assembled to devise an instrumentality through which the building industry may give united and effective aid in solving that problem.

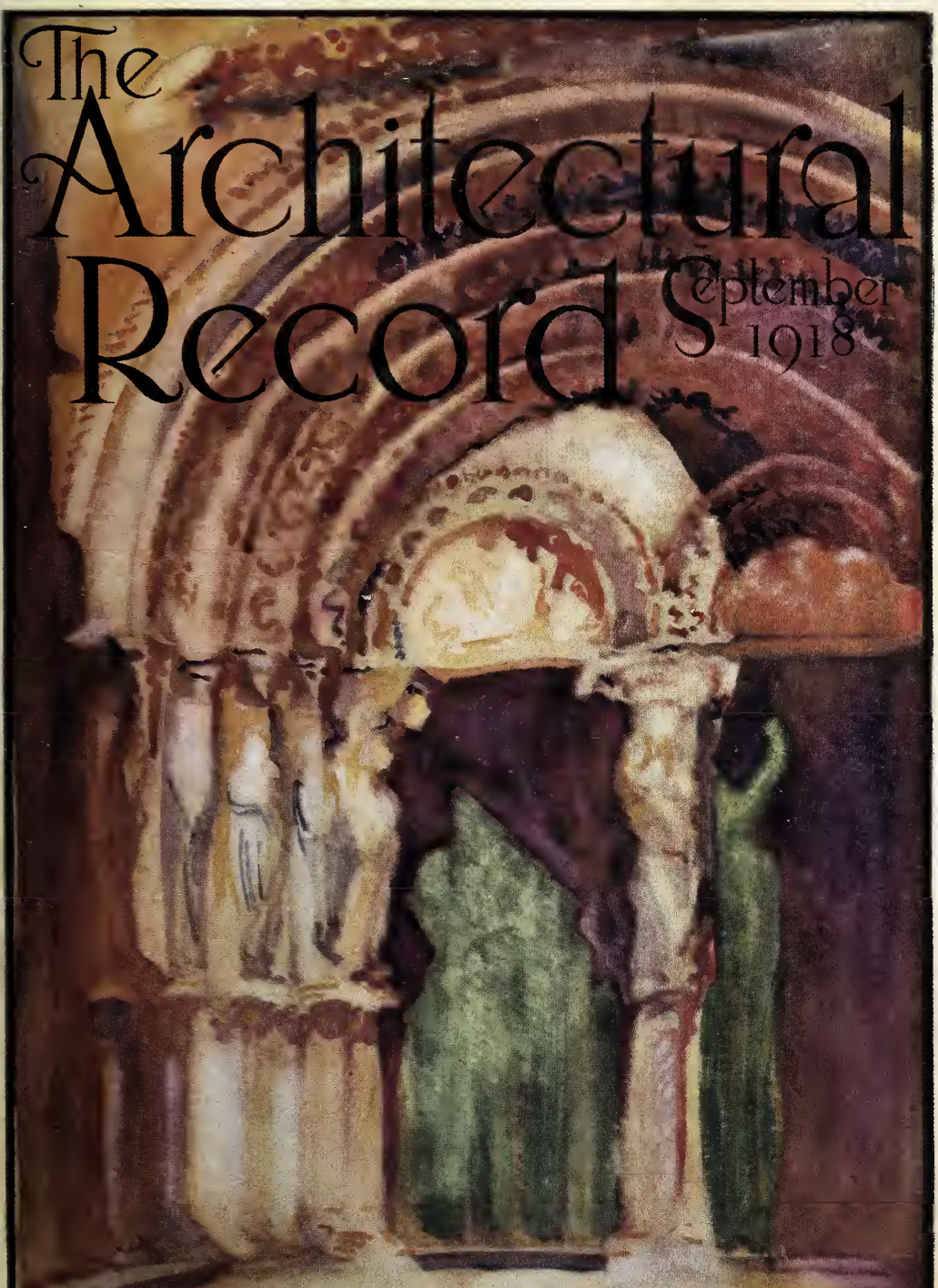
We pledge you and those officially associated with you the fullest cooperation within our power.

E. A. Roberts,
(Secretary.)

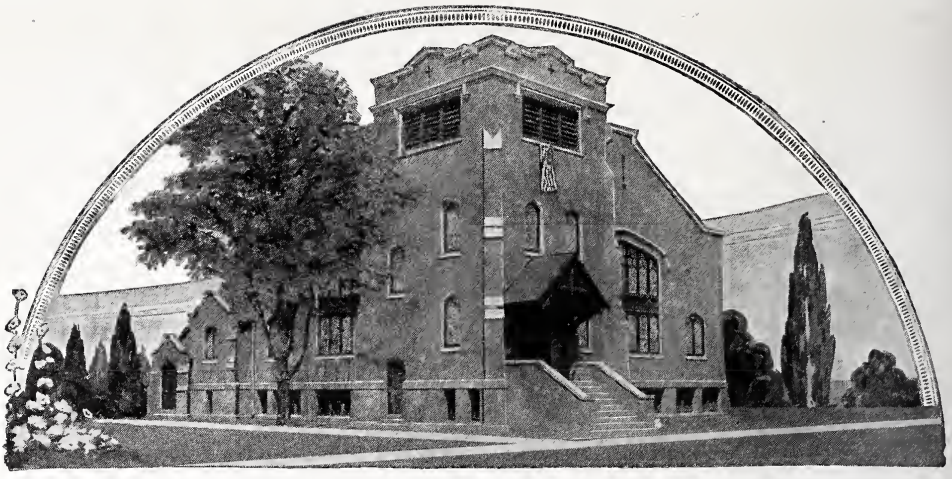
A complete report of this meeting may be obtained upon application to The Architectural Record.

The Architectural Record

September 1918



Published in New York
35¢ a Copy $3.00 a Year



Grace Baptist Church, Binghamton, N. Y. Elfred H. Bartoo, Architect. Stucco finish on background of Bishopric Board.

The finish of a building is one link in its chain of construction. Any weakness in that link, any breaks or letting down of the finish and the value of the whole structure is weakened.

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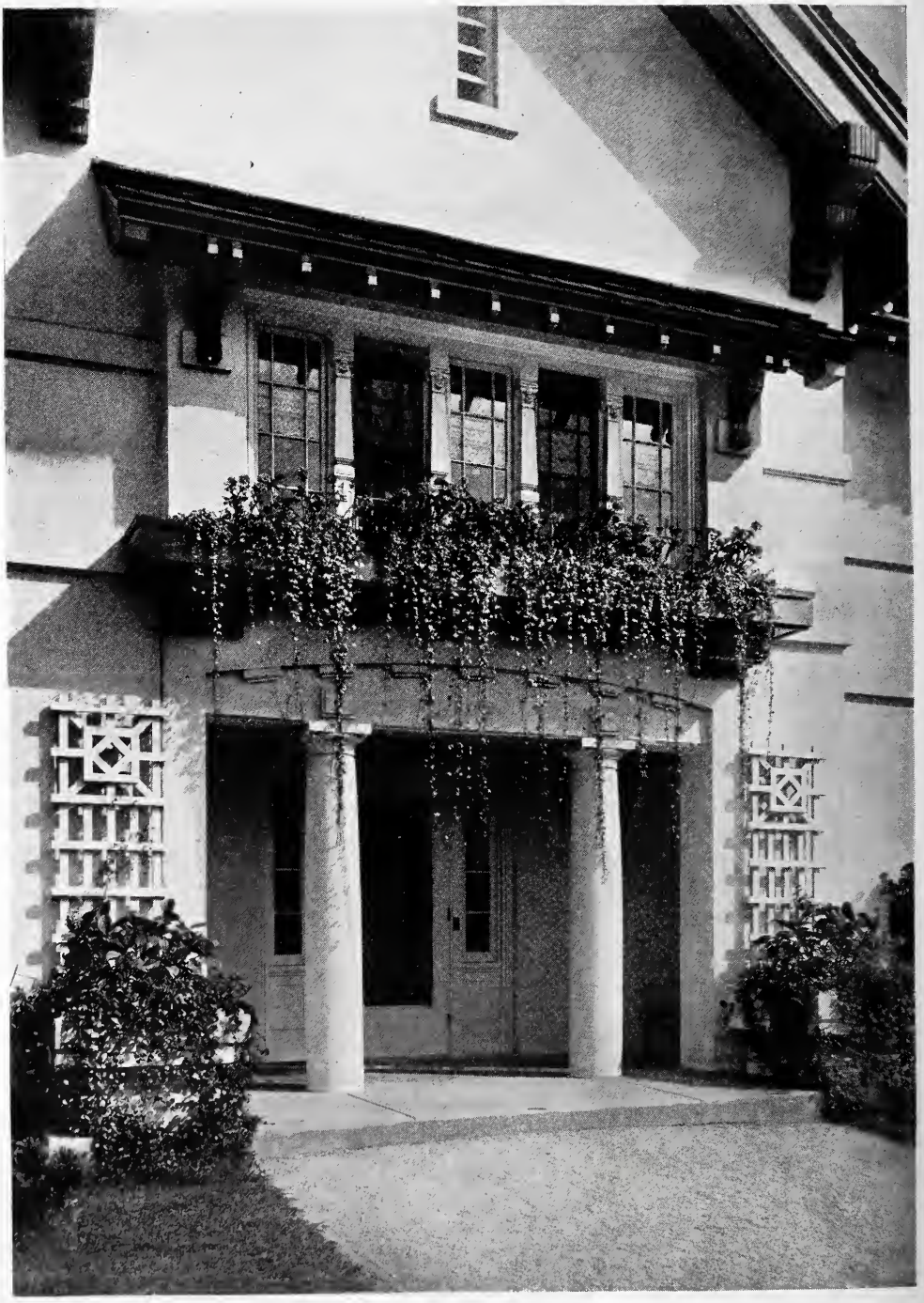
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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY
THE ARCHITECTURAL RECORD COMPANY
115-119 WEST FORTIETH STREET, NEW YORK
F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.



DETAIL OF ENTRANCE—RESIDENCE OF MR. F. ZIMMERMAN, LAKEWOOD, OHIO. BOHNARD & PARSSON, ARCHITECTS.

THE ARCHITECTVRAL RECORD

VOLVME XLIV NVMBER III

SEPTEMBER, 1918

The SMALL HOUSE

ILLUSTRATED WITH EXAMPLES OF THE WORK OF BOHNARD & PARSSON



BY I.T. FRARY

THE problems encountered in designing the small house, though they may seem of minor importance, are in a way even more vital than those of the costly one; for although the sums involved are less, they may represent the entire capital of the owner, which necessitates the most careful consideration of every item of expense.

In planning the small house the question of cost is often paramount, but it should not be forgotten that initial investment is not the only factor to be considered. In a business plant the factor of maintenance is the important one, and the most serious thought is given to the problems which have to do with minimizing operating expense and cutting down waste. In considering the arrangement of a house, the same thing should be borne in mind; for the home is the plant in which the greatest of all business is carried on—the business of living.

While the large house, with its corps of servants, may be planned with some disregard for convenience in carrying on menial tasks, the case is very different in the small home, where all the housework may fall upon the shoulders of the housewife or be shared with not more than one maid. Here the elimination of a half-dozen steps between kitchen and dining room means the saving of miles of walking in the course of a year.

The large kitchen, with various separate pantries and cupboards, which is essential where several servants must work simultaneously, is a great drain on the strength of the woman who does her own work. Her efficiency is wonderfully increased by having a small kitchen, with its cupboards so planned as to minimize the steps involved in preparing a

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RESIDENCE OF MR. F. ZIMMERMAN, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.

meal or clearing up after one. Economy of space and of the housewife's strength should be the controlling factor in planning the small house; artistic effect should be considered of secondary importance, in spite of the fact that this is the feature which we are apt to consider first and is the feature by which the architect's skill is largely judged. A lesson in saving and efficiency may be drawn from the ugly eight and ten room houses with which so many miles of streets are being built up in our cities and towns. They are built four-square, with hall, living room, dining room and kitchen on the first floor, three or four bedrooms and a bath on the second floor and perhaps a room or two under the roof. Not an inch of space is wasted and the compactness of plan cuts down housework and the cost of heating and lighting to the last degree.

Contrasted with these frankly ugly, but efficient little housekeeping plants, we see many pitiful attempts by young architects and amateurs to build houses of small cost which shall produce an effect of opulence. The result, all too often, is a waste of space in crazy hallways and useless corners; a waste of fuel because of the sprawling plan with its excessive area of outside walls; and a hopeless waste of nervous and physical strength on the part of the woman whose unhappy lot it is to take care of it and who finds too late that she is condemned to hard labor for life.

Of the houses that are shown here as illustrations of what can be accomplished in the way of good taste in design added to intelligent planning, four conform to the simple four-square plan, the porches and sun rooms on the Wightman, Newcomb and Thornton houses forming no part of the house proper, although they are so designed as to tie into the main structure, increasing its apparent size without affecting the simplicity of plan. It is interesting to note that although the general plan of these three houses is practically identical, entirely different exteriors have been produced, not only because of the styles adopted, but also by the treatment of porches and the addi-



VIEW IN GARDEN—RESIDENCE OF MR. M. B. VILLAS, CLEVELAND, OHIO.
Bohnard & Parsson, Architects.

tion of a two-story bay to one of them. The Lemperly house, although considerably larger than the others, has the effect in the photograph of being smaller because of the simplicity of its lines and the absence of porches to increase its apparent size.

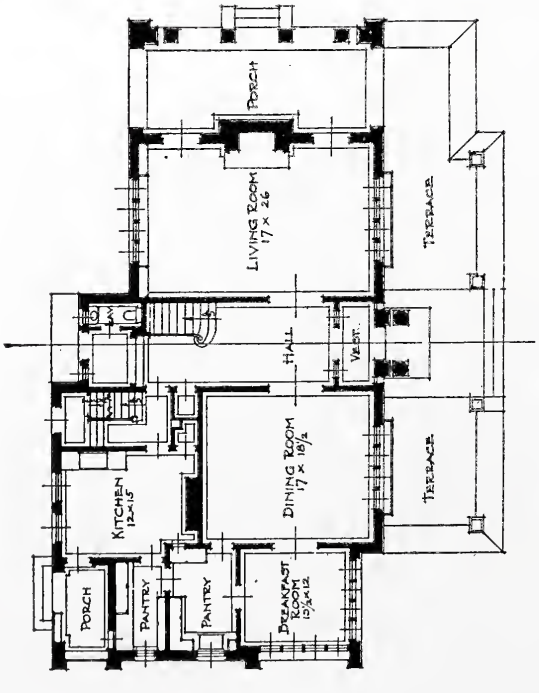
An important feature which is often overlooked in planning rooms is the relation of wall spaces and openings to furniture. It is not uncommon, even in houses of the better class, to find that no thought has been given to the placing of furnishings; bedrooms are built, in which there is no place for a bed; dressers have to stand in front of windows; and the piano fills the room. The writer has known of several instances where the prospective occupant of a new home has ordered a large, comfortable sofa to minister to future hours of ease, only to find upon its delivery that not a door or window was large enough to permit of its entry into the family circle. It is not at all uncommon to find stairways so narrow and crooked as to necessitate hoisting the larger pieces of bedroom furniture in through the windows.

Such things should be thought of when the plans are being drawn, and it is because of inattention to these apparently insignificant details that so many houses prove unsatisfactory to their occupants.

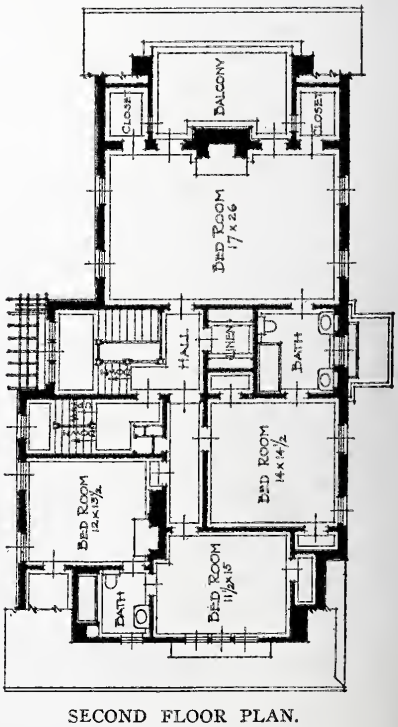
In this group of houses by Bohnard & Parsson, there is illustrated the possibility of designing small houses which are artistic and satisfying to the eye and at the same time show careful attention to the practical features that are so essential to the comfort of their occupants; in them is evident a studious effort to eliminate waste space, to effect economy of labor and maintenance, and, in short, to make provision for the efficient operation of that most important of all organizations—the home.



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Bohnard & Parsson, Architects.



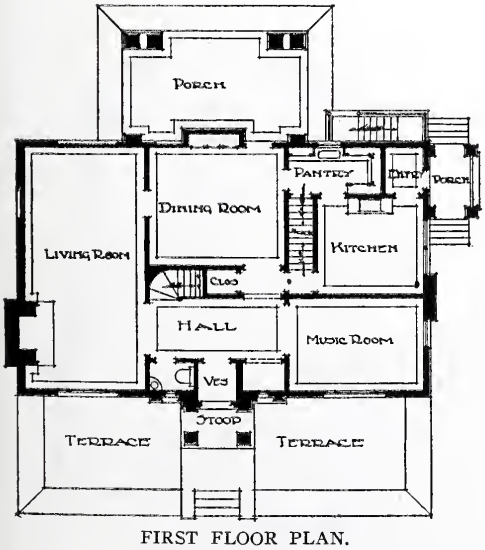
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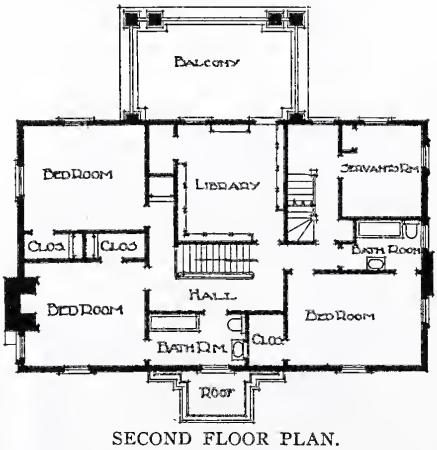
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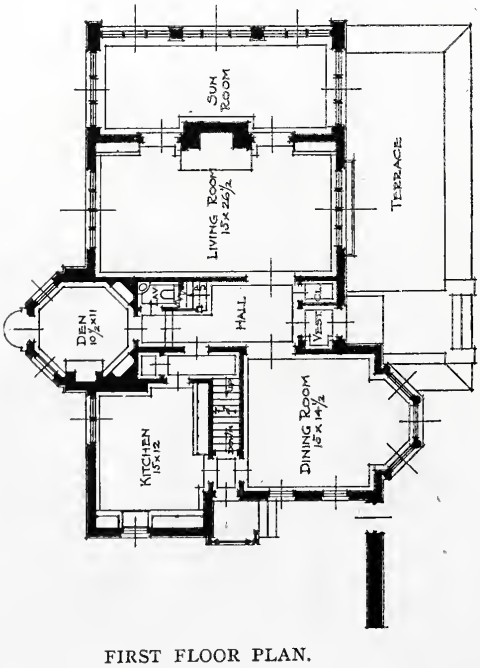
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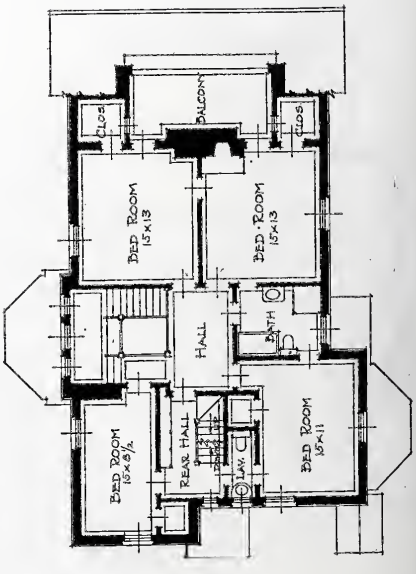
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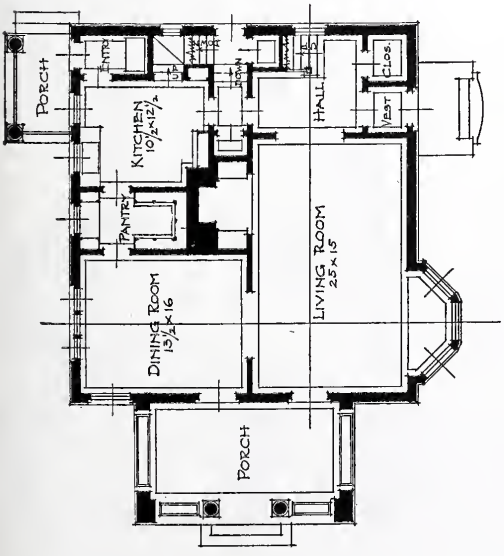
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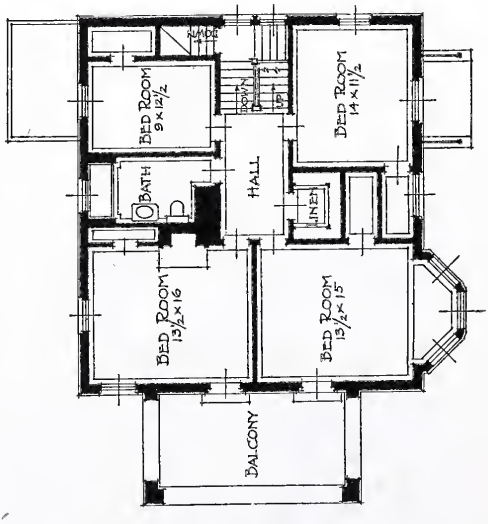
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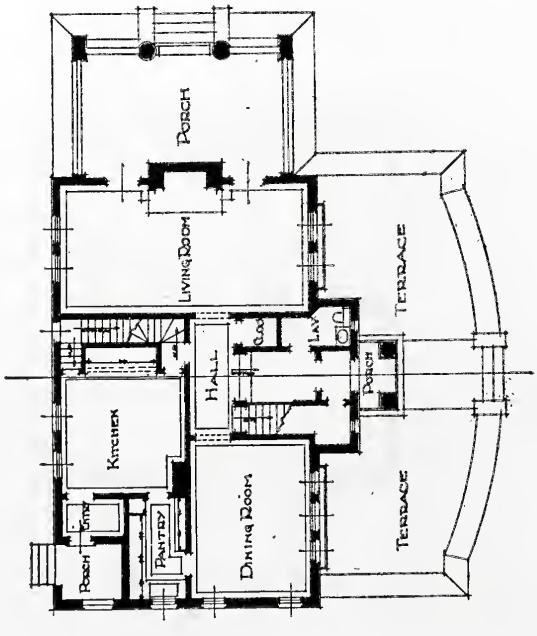
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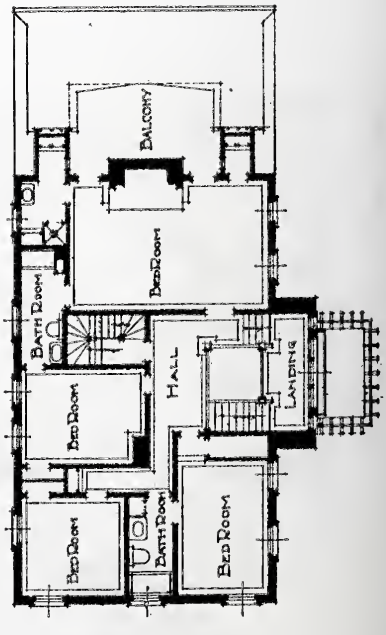
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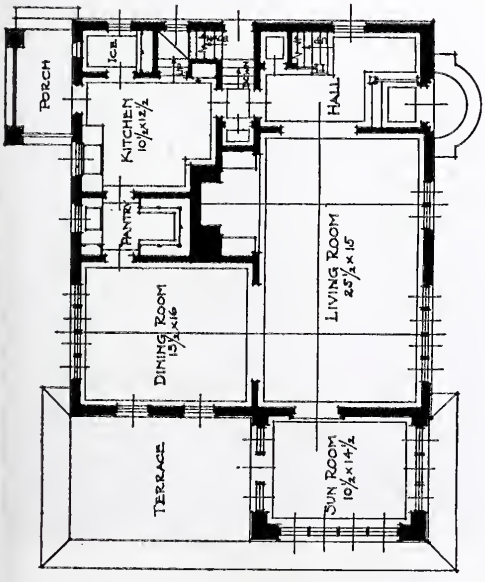
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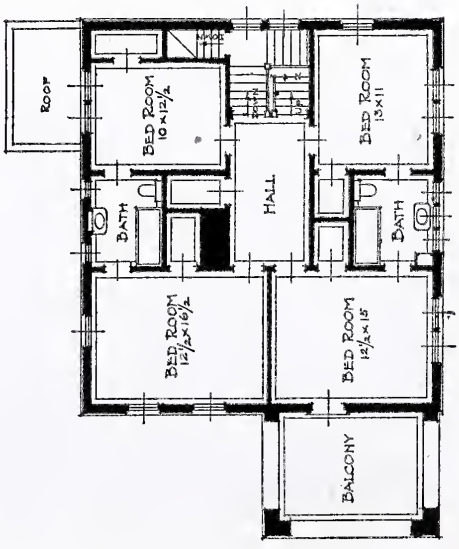
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RESIDENCE OF MR. W. P. WIGHTMAN, CLEVELAND, OHIO.
Bohnard & Parsson, Architects.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.



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Bohnard & Parsson, Architects.



DETAIL OF ENTRANCE—RESIDENCE OF MR. C. E. STAMP, CLEVELAND, OHIO.
Bohnard & Parsson, Architects.



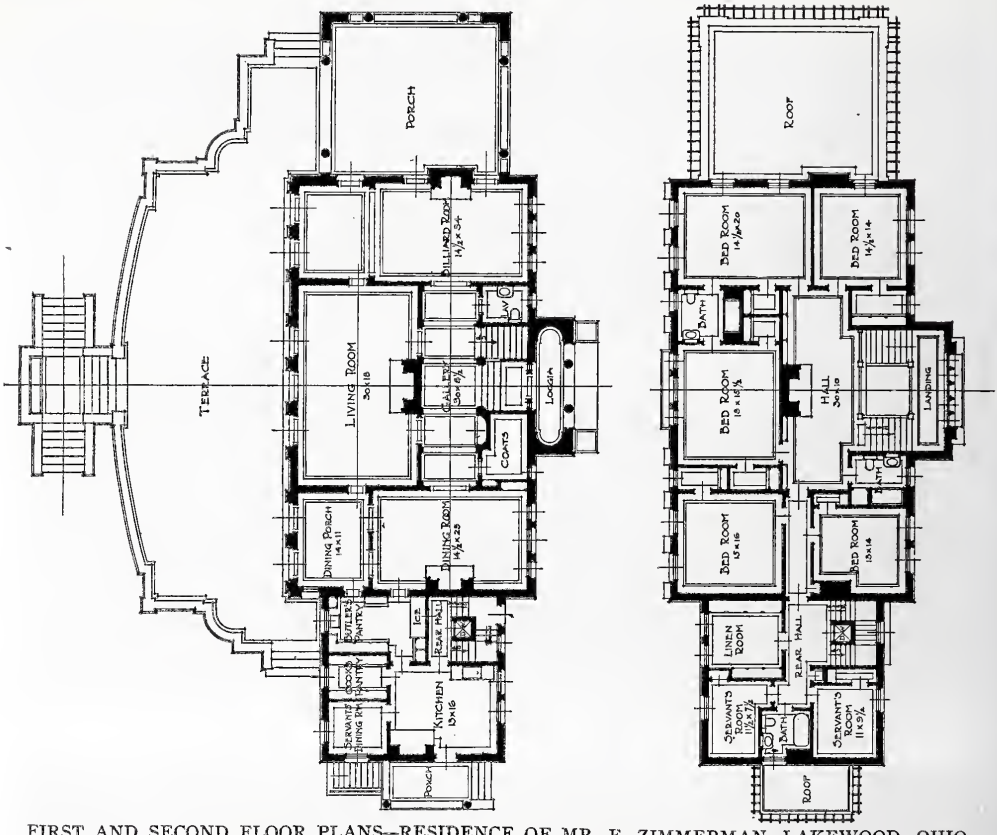
DETAIL OF ENTRANCE—RESIDENCE OF MR. PAUL LEMPERLY, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.



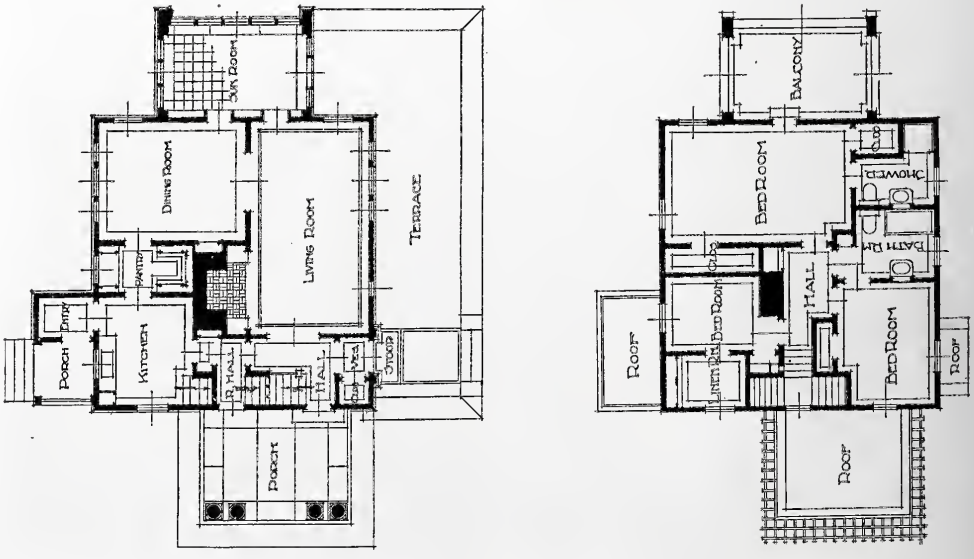
RESIDENCE OF MR. F. ZIMMERMAN, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.



RESIDENCE OF MR. C. G. NEWCOMB, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.



FIRST AND SECOND FLOOR PLANS—RESIDENCE OF MR. F. ZIMMERMAN, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.



FIRST AND SECOND FLOOR PLANS—RESIDENCE OF MR. C. G. NEWCOMB, LAKEWOOD, OHIO.
Bohnard & Parsson, Architects.

THE OFFICE BUILDING OF THE DEPARTMENT *of the* INTERIOR AT WASHINGTON, D. C.

CHARLES BUTLER, ARCHITECT

By Charles Butler

THE erection of an office building for the Department of the Interior represents the first successful attempt of a department of the Government to build for itself a home planned out to meet its very definite needs.

When Congress authorized the construction of the building considerable opposition was aroused by the site selected and by the type of building proposed, but the event has proved the good judgment of those responsible. It must be borne in mind that the Department of the Interior comprises many divisions whose work is largely technical in character. No such building as those planned in the competitions of 1910 for the Departments of Justice and State could have met the requirements of the various branches of the department for which space was needed.

Even such a building as the Bureau of Engraving and Printing is not, in the judgment of ex-Director Ralph, planned for the greatest degree of efficiency, while the handsome colonnade along the west front notably diminishes the light in the offices on that side of the building. It was felt by those most interested, that by placing the Interior Department Office Building on the site selected, entirely outside the Mall group, it would be possible to design a building which should meet in every detail the practical requirements of the Department without detracting from the monumental ensemble proposed for the Mall.

The legislation authorizing the erection of the building stipulated that it be an office building of modern type and be designed in the office of the Supervising Architect, who was authorized to call on an outside architect for assistance. As a result, the author was employed by the Treasury Department to design the building and authorized to organize an independent office force for this particular work.

The various sketches for this building had been prepared in the office of the Supervising Architect during the five or six years preceding, and the various divisions to be housed had crystallized their requirements, so that it was possible to design the building—which in its available floor space is said to be the second largest in the country, only being exceeded by the Equitable Building in New York—with all its complicated requirements, in the short space of nine months, from the commencement of the first sketches to the completion of working drawings.

The plot is about 400 feet square, with streets on all sides. The general plan takes the form of the letter E, with the back to the north on F street and the arms stretching south. This plan permits of opening the two courts to the south, an arrangement which experience has proved to be best in the climate of Washington.

The height of the building, determined by the District of Columbia regulations for residence streets, is six stories on the principal (F street) front, which is increased to seven stories on E street by the drop in the grade toward the south.

The three pavilions forming the elevation on E street are connected by two-story links, which mask the service courts from the street, but permit the free entrance of light and air above the level of the first floor.

On the E street front, midway between



CORNER PAVILION, F AND 19TH STREETS.



18TH STREET ELEVATION, THE OCTAGON IN THE FOREGROUND.

the wings are entrance driveways leading down to the two great courts, the pavement of which is at the basement level, so that the court elevations show eight stories above ground.

In the southern part of the eastern court, at the basement level, is the pressroom containing the great color presses of the map-making division of the Geological Survey, with the stores of paper and the lithographic stones; in the upper part of this wing, above the pressroom, is the photographic section of the Survey.

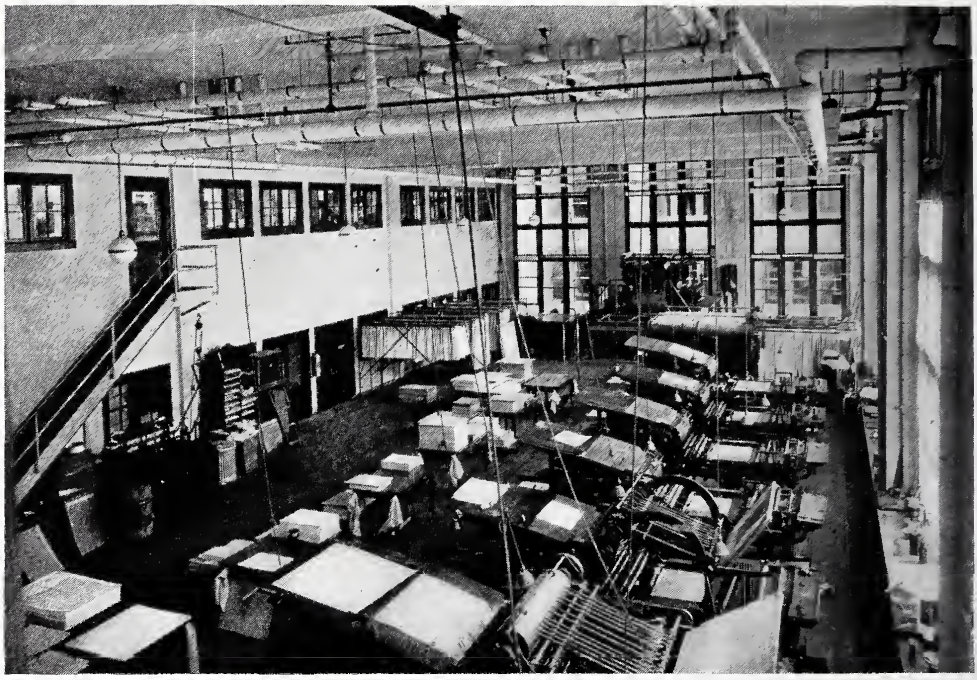
The general arrangement of the plan presented an interesting problem. The existing street car lines and the distribution of population determined the placing of the principal entrances on F street, and the divided occupancy determined their distribution.

Of the six tenants of the building the largest is the Geological Survey, which occupies almost the entire F street front, together with the central wing, the pressroom wing and about half of each of the two-story southern links.

The next tenant in point of area occupied, the General Land Office, takes the entire west wing, except the top floor, with the lower story devoted to its great filing service.

The Reclamation Service has the top floor of the west wing, while in the east wing the lower stories are occupied by the Bureau of Mines, which also has half of the easterly of the two south links. The third and fourth floors of the north wing are occupied by the Bureau of Indian Affairs, and the fifth and sixth floors by the offices of the Secretary, whose public office is at the southern extremity of the wing, with an extended view of the east, south and west from the Capitol to Arlington.

The question of handling the tenants of the building is slightly different from that presented by the ordinary office building, for all employes arrive at and leave the building at the same hours, and the luncheon hour is the same for all. The necessity for surveillance of its own employes by each division is apparent, and as this would have been defeated by free circulation on each floor, it was determined to place on the F street front three entrances, each corresponding to a wing



PRESSROOM WHERE GEOLOGICAL SURVEY MAPS ARE PRINTED.
In the Distance Is the Great Five-Color Press.

of the building and to a group of stairs and elevators. The employes of each division are thus sorted on their entrance into the building, and the same system applies to visitors, who are directed on entering to the elevator leading to the division they wish to reach.

In effect, the public portion of the building is limited to the three entrances on F street, the broad corridor connecting them, and the Assembly Hall and Library to which this corridor gives access.

At the south end of each wing is a secondary entrance reached from the ground floor level, with staircase and one passenger elevator in each wing, and freight elevators accessible from the court at the basement level in the eastern and central wings.

An entrance with driveway and marquise is provided on the east side near the south end of the Eighteenth street wing for the use of the Secretary or any other visitor who may desire to drive up under cover.

The stairways adjacent to each elevator group are carried from basement to roof.

Before proceeding with the design of the building a careful study was made of the best existing office buildings in New York by the Supervising Architect, Mr. Wenderoth, Director George Otis Smith of the Geological Survey, Chairman of the Building Committee, and the writer. This survey showed that a large amount of space in even the most modern of these buildings was to all intents and purposes wasted because of bad lighting. In order to avoid this common defect the standard depth of twenty feet was adopted for all rooms in the building.

The central corridors are eight feet in width, and where corridor and rooms are thrown into one, as in the Land Office File Room, the full inside width of the wing is forty-nine feet. The shallow room depth permitted the reduction of floor heights to twelve feet from floor to floor, a very distinct advantage, in view of the height restriction imposed by the District regulation.

A very large proportion of the smaller offices are occupied by two men engaged on scientific work requiring ample nat-



ELEVATION (REAR) ON THE PARK FORMED BY THE INTERSECTION OF E STREET AND NEW YORK AVENUE.



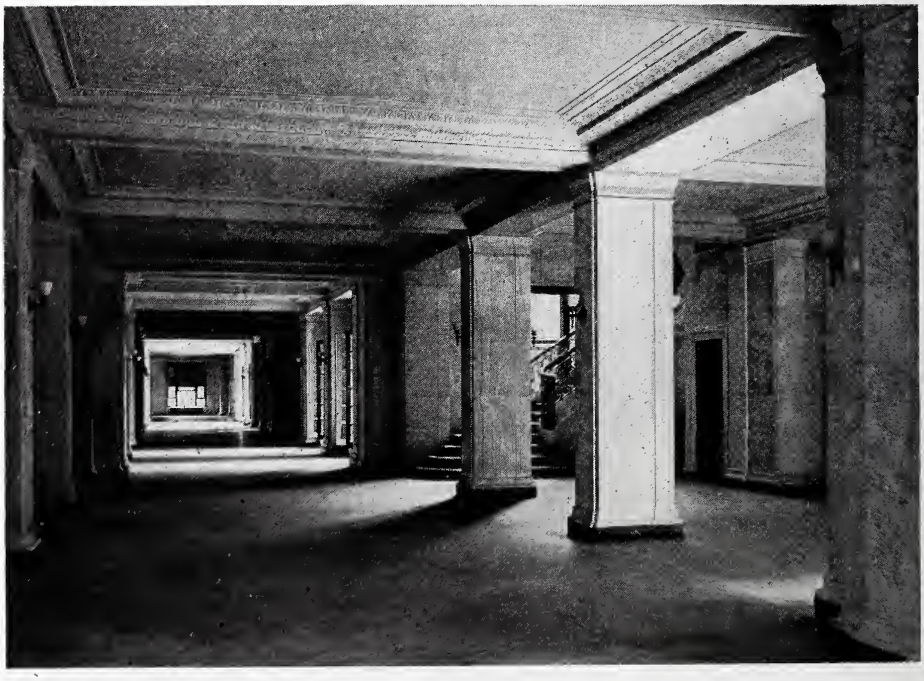
ELEVATION CORNER OF E AND 18TH STREETS, FACING ON SMALL PARK.



ELEVATION (REAR) ON THE PARK,
SHOWING SIZE OF INTERIOR COURTS.



DETAIL OF MAIN ENTRANCE ON F STREET.



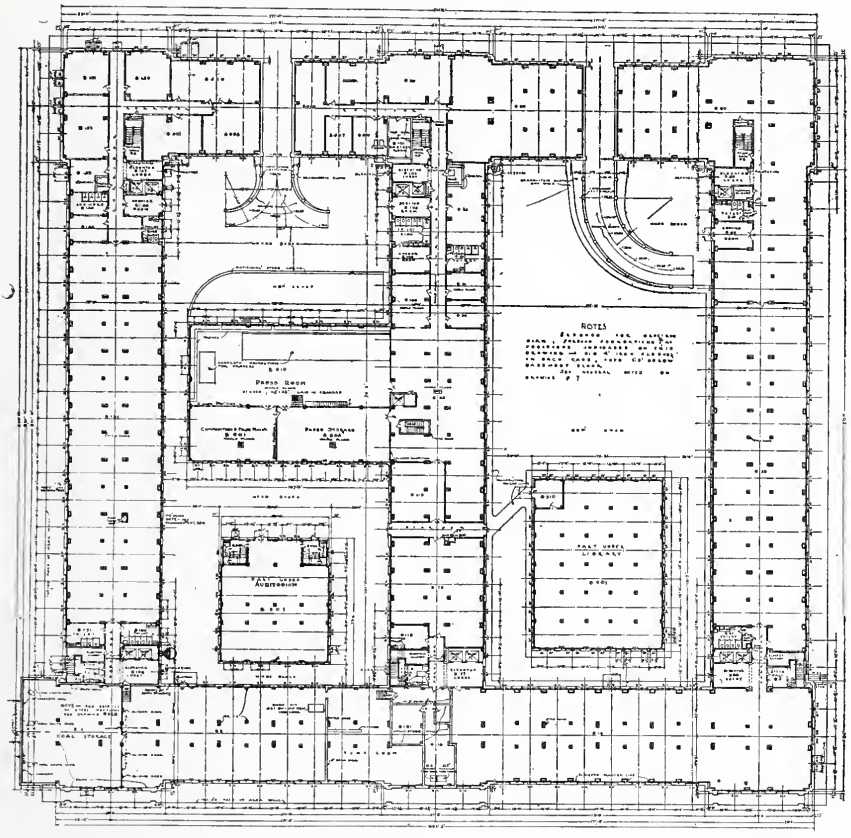
MAIN PUBLIC CORRIDOR, FIRST FLOOR.



START OF MAIN STAIRWAY.



PUBLIC OFFICE OF THE SECRETARY OF THE INTERIOR.



BASEMENT FLOOR PLAN.

ural light. This type of occupancy led to the adoption of the standard column spacing of 14′ 4″, which was most economical in distribution of steel.

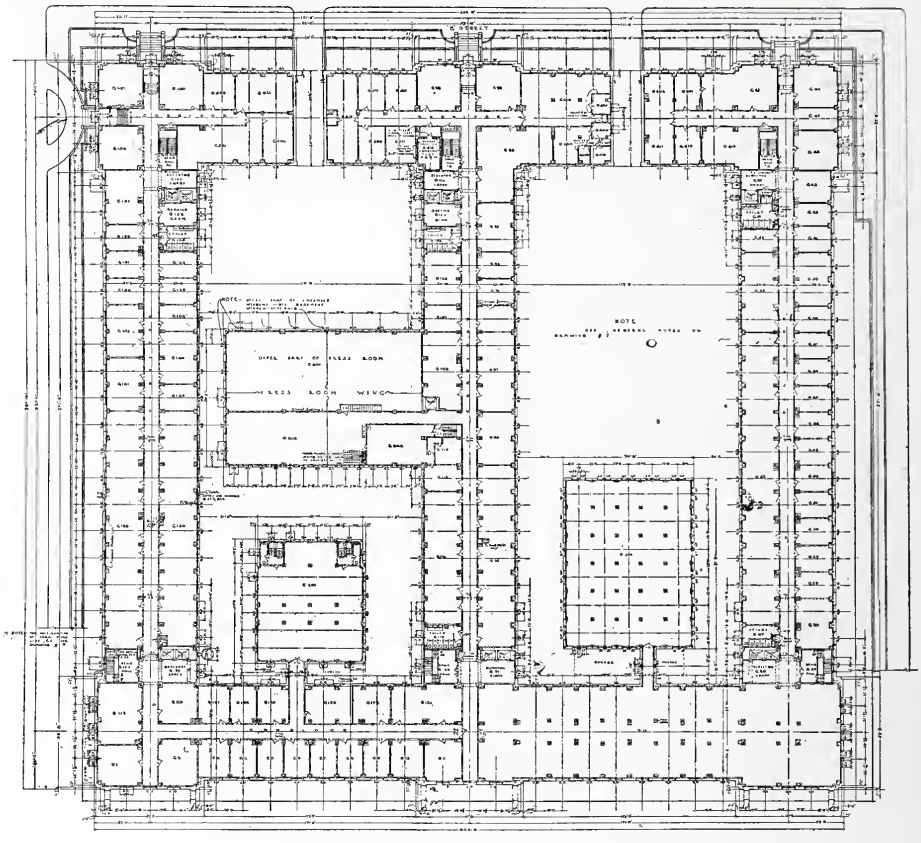
In the effort to give ample light to these offices a masonry opening of 7′ 5½″ was adopted for outside walls and on the courts this was increased to 10′ 0″. In other words, in the street elevations the openings are over 50% of the total wall space—the voids are greater than the solids, and on the courts they occupy 70% of the total surface. As a result the building has not an inch of badly lighted space, in either interior or exterior offices.

With the exception of the Secretary's wing on the sixth floor, the long north and south corridors are carried through unobstructed from end to end, with outside light at the extremities; in addition, all office doors are glazed, with the result that notwithstanding their great length, 400 feet, these 8-foot corridors give the impression of ample width and lighting.

Among the interesting features of the building are the map printing and photographic divisions, to which reference has been made, the laboratories of the Geological Survey and the Bureau of Mines, and the copper plate engravers' studios, where the men work in couples, each with his own window, so that he can control his own lighting.

The Library and Auditorium are separate buildings, projecting into the courts, accessible from the public corridor on the first floor and with two lower floors for storage.

The Auditorium, with a seating capacity of about 300, is especially arranged for motion pictures, but has ample natural lighting as well.



GROUND FLOOR PLAN.

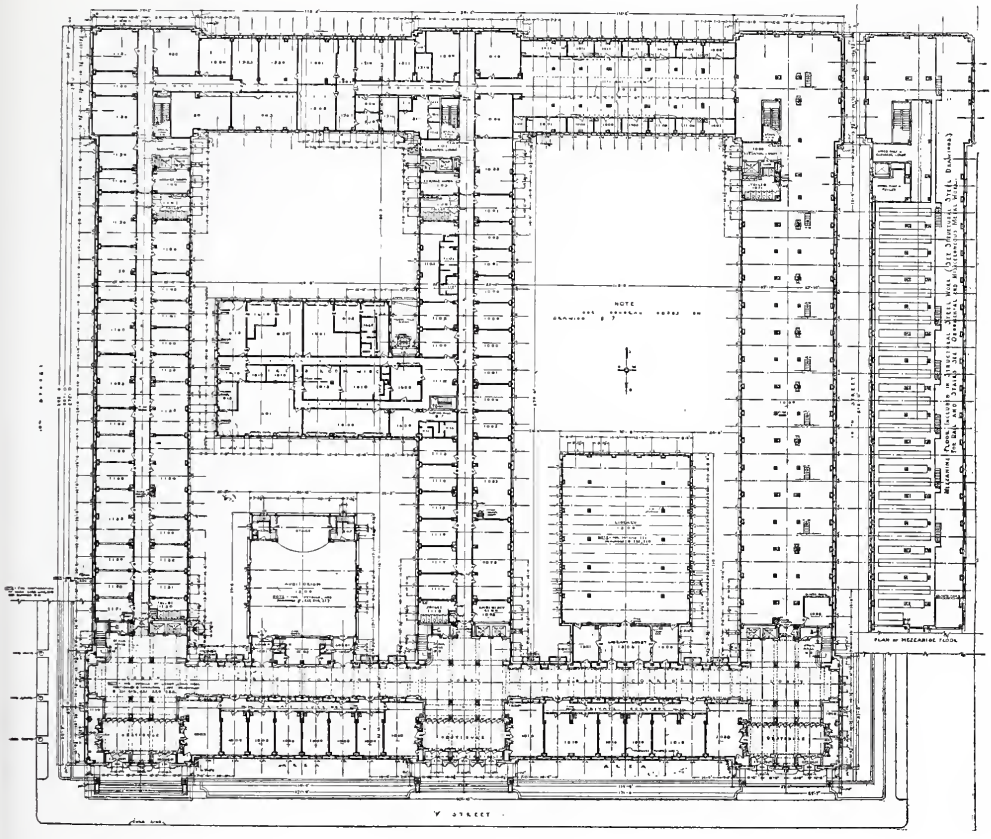
The Library of the Geological Survey is planned to house the largest collection of the sort in the world. To the ordinary stacks are added special map cases, all grouped near the entrance, while the reading and working space is at the south end of the building, on the court, or in separate rooms. The remaining room of special interest is the Secretary's public office. This room is wainscoted from floor to ceiling in paneled English oak, with a molded rib plaster ceiling, recessed windows and a simple Tudor manel, with paneled oak overmantel. Adjoining is the Secretary's private office, with paneled walls and ornamental plaster ceiling.

In connection with the detail plans Col. J. Hollis Wells was called in as an expert in office buildings and their mechanical equipment, and his long experience was of great assistance in solving the many problems which had to be met.

During the progress of the preparation of working drawings, careful approximate estimates were procured by Col. Wells from Messrs. Thompson & Starrett. The building has the standard equipment of a high class office building, with wash basins in each office, ample public and private toilet rooms on each floor, ice water in hallways, telephone and fire alarm equipment throughout.

In addition provision is made for the special requirements of the laboratories, such as earthenware wastes where acids are employed, high pressure steam, electric power feeders, etc.

In order to avoid the possibility that the low bid might exceed the appropriation of $2,500,000, which in the case of Government work means readvertising



FIRST FLOOR PLAN.

for bids and the consequent delay, it was determined to design the building in brick, with stone basement and stone cornice.

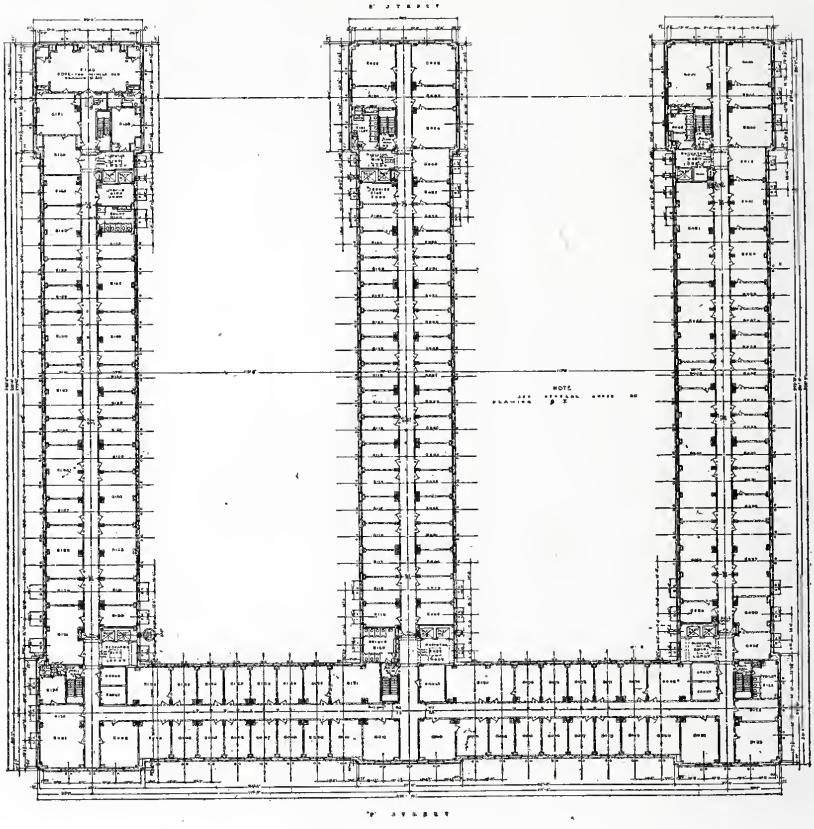
Owing to the fact that the final estimates were taken when the market was about at its lowest point, the low bid was far below the amount of the appropriation.

Secretary Lane, who had throughout the preparation of the plans followed the work with great interest and sympathy, was able to persuade the Treasury Department that it was proper to expend the remainder of the appropriation in securing the best possible building. It was therefore decided to face the entire building, both the street and court fronts, with limestone. As the writer had left for France immediately on the completion of the working drawings, the restudy necessary for the change from brick to limestone was carried out by Mr. Charles Morris, Chief Designer of the Supervising Architect's office.

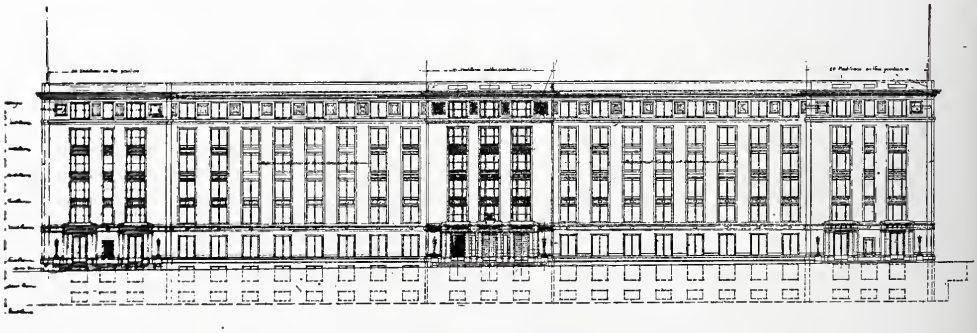
The principal modifications are on the F street front, where the entrances were simplified by the omission of columns, while the dimensions of openings and details of cast iron window fills are unchanged. One of the most interesting items in Mr. Morris' work is the very low relief which he has adopted for sunk frames around windows, belt cornices, etc., in some cases not exceeding one-quarter inch.

Since the completion of the building Secretary Lane has utilized a portion of the unexpected funds for the erection on the roof of a restaurant and roof garden for the benefit of the many employes of the department.

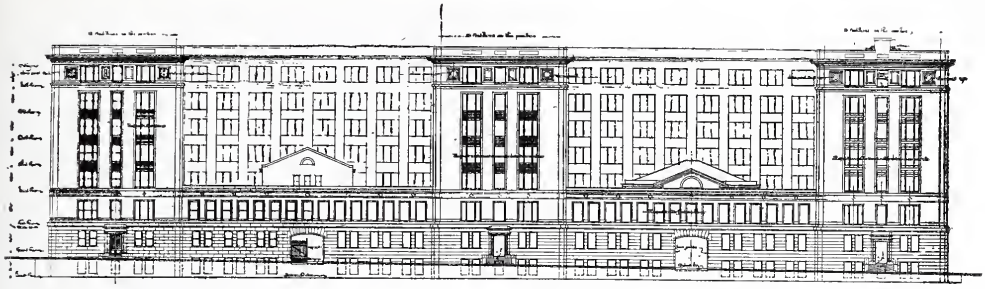
With the completion of this work, the



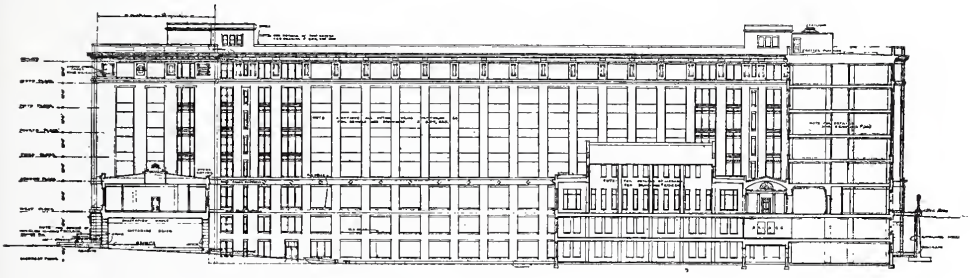
SIXTH FLOOR PLAN.



"F" STREET ELEVATION.

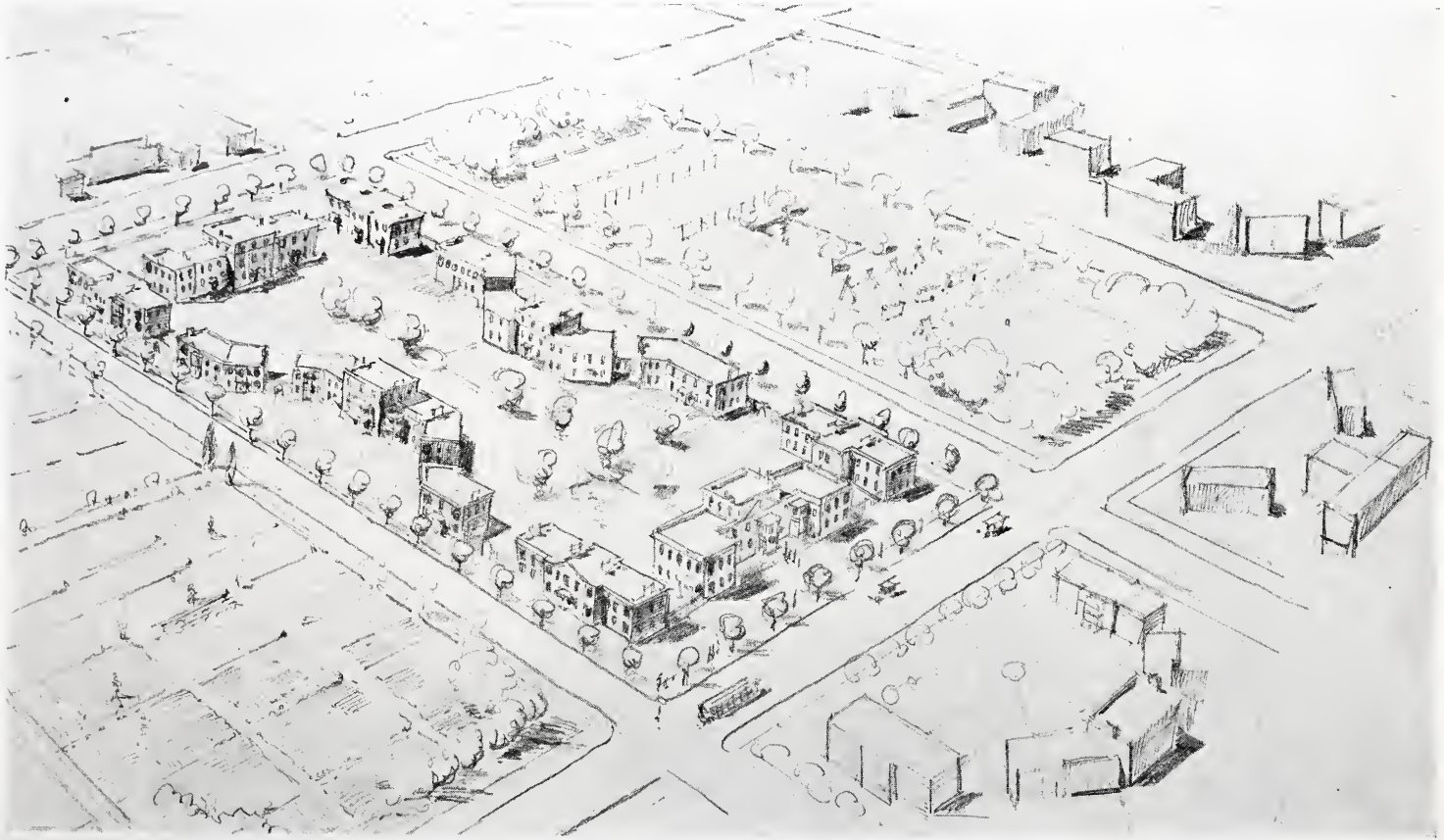


ELEVATION TO "E" STREET.



SECTION THROUGH WEST COURT LOOKING WEST TOWARD 19TH STREET.

Interior Department will have a home equipped with every detail for convenience, and planned to produce efficient work. While its purpose is utilitarian, by its very simplicity the huge building gains a charm and dignity which is not always vouchsafed to more pretentious structures.



VIEW OF ONE BLOCK OF PROPOSED APARTMENT ARRANGEMENT.

HOMES for WARTIME WORKERS



By Alfred C. Bossom

THE very high plane established by the United States Shipping Board, Emergency Fleet Corporations, Housing Department, entitles the members to the enduring gratitude of workers and of the entire architectural profession.

This work might have been handled in a way that would have been a detriment to the entire future of housing in America; but the amount of study and hard gauge attitude that they have maintained in the face of the driving goal of speed, results have developed fresh views and modified old ones for those of us who have made a detailed study of this subject extending over many years.

The Government's reason for undertaking housing work is, first, to aid in winning the war, which is to be accomplished by providing for workers homes where they either did not exist at all or only in insufficient quantities; and, secondly, to make these workers happy and contented, and thus increase their efficiency to the very utmost by eliminating the disconcerting influences of unsatisfactory living conditions.

This freedom from worry is of vast importance, for the actual number of available workers today is many millions less than when the war started, due to the enlargement of the army and navy, the returning of foreigners to their native lands and lack of immigration.

This, therefore, means that, to maintain the standard necessary to enable the war to be carried forward with the utmost despatch and success, each member of this vast army behind the army must be trained and cared for as workers have never been cared for before.

In endeavoring to produce this physical and mental attitude among the workers, the requirements of tomorrow must not be entirely lost sight of, for either the Government or some delegated authority will have to maintain these homes or dispose of them after the war, which will not last forever.

Each undertaking must be judged on its merits to determine how much of the work shall be temporary and how much permanent; and when a satisfactory decision on this point is arrived at, the problem is as to what form the permanent housing shall take.

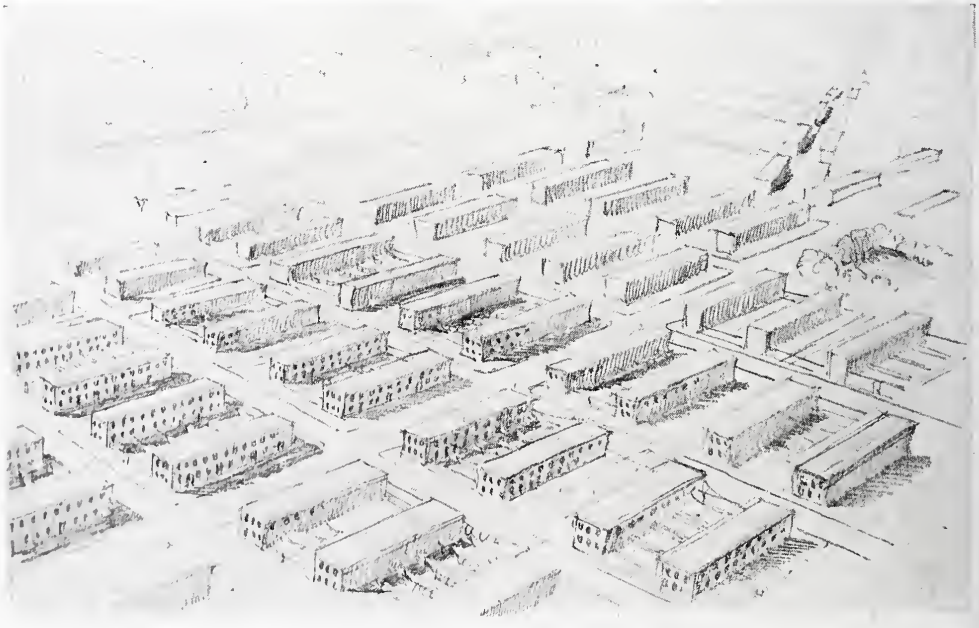
In this article no effort will be made to deal with the various forms of temporary accommodation, but only with that proposed for permanent improvement.

Twenty years ago the author was in the Architectural Department of the London County Council, Housing Section, where we were designing and building homes for the workers, and the general type of the improvement in those days in suburban locations was of the one and the two-family houses and of a form quite similar to the majority of those being built in this country today.

If a thorough examination be made of the large improvements that have been effected in England since the war started, under conditions similar to those that are now being undertaken over here, it is practically impossible to find an individual or even a two-family house. The great Well Hall development at Woolwich (the great naval ordnance works, etc., on the Thames) has not a single one-family house shown in the plans. The entire project consists of houses, or



REAR OR ORNAMENTAL GARDEN FOR THE PROPOSED APARTMENT HOUSE ARRANGEMENT SHOWING LARGE OPEN SPACE, FREE OF ALL ANNOYANCE.



BIRD'S-EYE VIEW OF PHILADELPHIA ROW TYPE OF HOUSES WITH BACK ALLEYS.

apartments, if you wish to call them, grouped in irregular combinations.

Thus they have reduced the proposition to very much of an intensive housing type on certain plots with many large open spaces in close proximity. The average land value of a housing improvement, here in the United States, varies as a rule from five per cent. of the cost of the entire improvement, and therefore the land, as such, does not cut such a great figure, as it is very often given credit for, so much so, for by a judicious arrangement of the housing units double the area of land could be used and still make the total expenditure upon the entire project less than if using some different arrangement.

For the sake of clearness, the term "housing unit" here used signifies a habitation for one family, consisting of 4, or 5, or 6 rooms, as the case may be, complete with bathroom, kitchen, etc., and for the sake of comparison of the different methods of housing, a typical block of 600x200 is assumed, but this regular plan is not recommended for consideration, though some such definite basis must be used to obtain a ready comparison of the different methods possible.

The three forms of housing that are prevalent in this country today are:

First, the regular New York row type, consisting of continuous straight blocks extending around the full perimeter of the plot and creating probably one of the most unsatisfactory arrangements in permanent housing that has been evolved.

Next, and equally unsatisfactory, though allowing a little more apparent ventilation, is the Philadelphia cross-road type of house with the back alleys.

Then there is the arrangement of cottages in rows, varied, of course, as one-family or two-family houses and interspersed with some few grouped structures; also houses joined together side by side, making different arrangements and artistic combinations, giving each man his own private establishment, his own little garden, his own furnace for heating the house in winter, his own range for cooking, etc.; in fact, a complete self-contained unit, and this has been looked upon as the highest type of housing improvement. But, is it so?

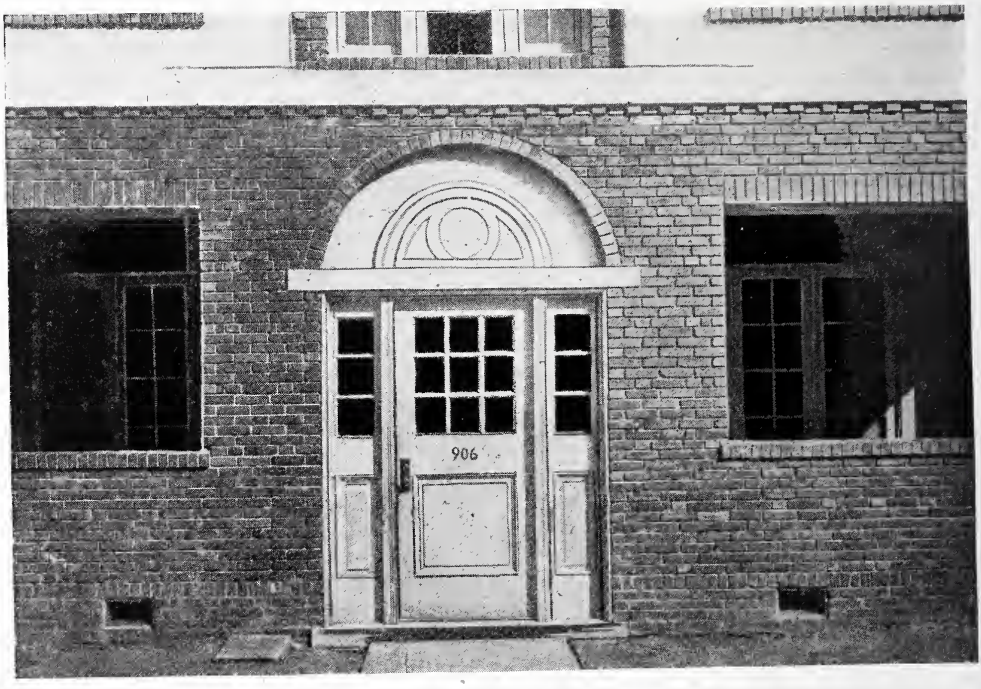
It is possible to create a development complying with every esthetic and hygienic requirement, possessing far more satisfactory living conditions and providing greater benefits to the inhabitants, and to do it with less building material, less labor, more open space for garden and playgrounds, and with a saving of anywhere up to 20 per cent. of the total financial outlay.

It is possible to house, by a different method equally advantageous in most respects and infinitely better in others to a cottage scheme, six families at the cost of housing five and obtaining this result with possibly between a 10 or 15 per cent. reduction in the number of building workers required to construct the same.

This sounds as though it might be rather an exaggeration; but if it is not so, why has the principle not been adopted most extensively?

In the first place, the principle has been adopted by the great majority of those with the ability to do in practically all of the larger cities. How many people today, for instance in New York, live in houses when they can live in apartments? The household servant question is much reduced, the furnace man and his attendant idiosyncrasies are avoided. Here is a known paid annual rent and expense charge and a sense of security that exists due to the congregation of many people at one point and a latent freedom from care and simplification of living, difficult to reduce to words.

All these advantages accrue with great force to the very small household where the husband and wife have to do all the work themselves. Therefore, why not take advantage of this in Government housing? Why should not the ship-worker or munition worker have such living conditions that, when he gets home tired and dirty, he knows hot water will be awaiting him irrespective of whether his wife stayed at home to keep the range going or not? Why on the cold days, when none wishes to go down and tend to a furnace the last thing at night and the first thing in the morning, should he not have the advantage of a central heating



AUTHOR'S FIRST STEP IN THE DEVELOPMENT OF THE LOGGIA TREATMENT AVOIDS PORCH AND YET GETS ADVANTAGE OF THE SAME AT BRIDGEPORT, CONN.

plant that the apartment house dweller has?

There is no reason why these advantages should not be given to the worker, provided at the same time he is given all of the privacy that a house would give him and all of the advantages that a house would have with none of its disadvantages, at no greater or perhaps at a less cost. This can all be furnished.

For instance, upon a typical plot 600x200 it is possible to arrange on forty-foot lots thirty two-family houses, which is practically the maximum number of families that could be placed on such a piece of land with the cottage form of housing. But by using small apartment houses, only two or at the most three stories high in a few places for the sake of artistic value, that is, with only the same number of stairs as in the cottage, it is possible to provide 104 family units equally large and complete on this same ground area of 600x200.

Assuming an arrangement such as follows, which would embody the nearest to the ideal living conditions consistent with the requirements: First, a block of small apartments; next, a block 600x150 given up to allotment gardens; then another block 600x200 given up to apartment houses; next to this, again a plot 600x150 given up to children's playgrounds, etc., and so on, so that between every row of houses there will be free of all construction a block of over 200 feet from front to front. In the rear, these apartments would have exactly the same space that the very best arrangement of the cottages could give.

The roofs of these small apartments should be used as a drying yard for the clothes, thus leaving the entire space between the houses for ornamental gardens, a place of quiet and repose. Each apartment or flat should have its own private entrance, the same as a house would have. Within the space of each apartment should be provided a loggia, which, in effect, is a protected exterior room, having all the advantages of a porch, so that when the wife wishes to go out she could leave her child on this in the fresh air and with a sense of absolute



VIEW OF A STREET IN A HIGH GRADE DEVELOPMENT AT BRIDGEPORT SHOWING THE SPACE IN FRONT IN SUCH AN ARRANGEMENT.

security, knowing that no harm would come to the little one, as is possible on an ordinary open porch. This loggia could be used as sleeping porch, as it would not have the undue conspicuousness of the ordinary porch, also none of the habitable rooms would be darkened by being under the shadow of a porch.

Such an arrangement of buildings as that here illustrated lends itself readily to this treatment, as there are so many exterior angles, all very suitable for these porches, with allotment gardens as here contemplated. All the storage space needed can easily be arranged in the basement, and the advantages that the rich man has in his Fifth avenue apartment can be extended to the worker at a cost less to him per family unit than is now being expended today in providing him with lesser benefits in the individual cottage.

Community garages could be equipped at the end of the allotment gardens without in any way interrupting this arrangement, and with these gardens as here contemplated any active spirit can go out and take all of the exercise he wishes and at the same time the children can play in the grounds in safety, an absolutely impossible condition if each house was built upon its individual lot.

The workers who prefer to rest after their day's work can sit in the ornamental garden in the centre of the house away both from the allotment gardens and playgrounds, without having the annoyance of hearing a neighbor's drying clothes flapping continuously nearby.

By artistically arranging these small apartments into either two, four, six, eight or ten units or groups as desired for effect, all of the variety and esthetic arrangements possible with the most expensive type can be achieved.

The cost of installing and maintaining what may be termed equipments, for gas, electricity, water and sewerage, would be immensely reduced in the apartment house plan over that of the cottage plan; also a very great saving would be brought about by the use in these apartments of common exterior walls, the simplification of construction, as regards roofs, floors,



REAR VIEW OF TYPICAL HIGH GRADE COTTAGE DEVELOPMENT SHOWING THE GARDENS GIVEN UP TO CLOTHES-DRYING, ETC., AT BRIDGEPORT, CONN.



DETAIL SHOWING HOW THE AUTHOR WORKED OUT THE LOGGIA IDEA AVOIDING PORCHES IN A DEVELOPMENT AT BRIDGEPORT, CONN.



A COTTAGE ARRANGEMENT WITH THE LARGE AIR SPACING SHOWING EVEN WITH THIS WIDE TREATMENT THERE IS NOT THE FREEDOM THAT THE APARTMENTS HAVE. THIS IS THE VIEW OF A DEVELOPMENT BY THE AUTHOR IN CONNECTICUT.

staircases, piping, etc.; in fact, they would be substantially similar to a fabricated boat, and yet have all of the variety and every advantage for health and good living that can be desired.

In the course of the author's practice, he has talked with workers and their families in most of the States extending from Texas to the Canadian border and there seems to exist no great desire among the workers for the individual house that has so long been assumed. A very marked majority and all who have apparently thought about the matter, with any seriousness, express a decided preference to living in reasonable proximity to each other, provided they have all the privacy of a house, and have the allotment gardens, children's playgrounds, with its swimming pools, tennis courts, sand piles, swings, etc., and also their general private garden for ordinary use. These additional attractions to the worker's mind far exceed the attractiveness of the small individual house on its own lot.

Of course, the viewpoints of the worker and the employer are very different when it comes to the disposing of these houses. The employer feels that if he can get his workers to purchase houses in a certain location, they will be, comparatively speaking, tied to the spot and he will thereby stabilize his labor turnover; but the worker, from his side, naturally will hesitate before purchasing his home, unless he is assured that he will always be able to get employment in this locality, and this assurance is impossible, seeing that every one of the houses being built by the Government was not required in normal times—that is, before the war started.

The American public, as represented by the Government, should look upon housing at this stage as a war expenditure—to create a greater efficiency in labor and to produce munitions and ships with dispatch—and any scheme predicated upon the purchase of homes by the workers is foredoomed to failure.

In the regular routine of living today, unattached men and women are assumed as living as boarders, and are, so to speak, transients, able to move to where work is offered; so is it fair to ask the married man, who has already assumed the serious responsibility of providing for a family, to agree to tie himself up permanently by purchasing a house without having any corresponding assurance that he will be able to get continued employment to enable him to pay for the same, and within a reasonable radius of the location of the house itself?

When the world has become stabilized again after the war, there is no reason

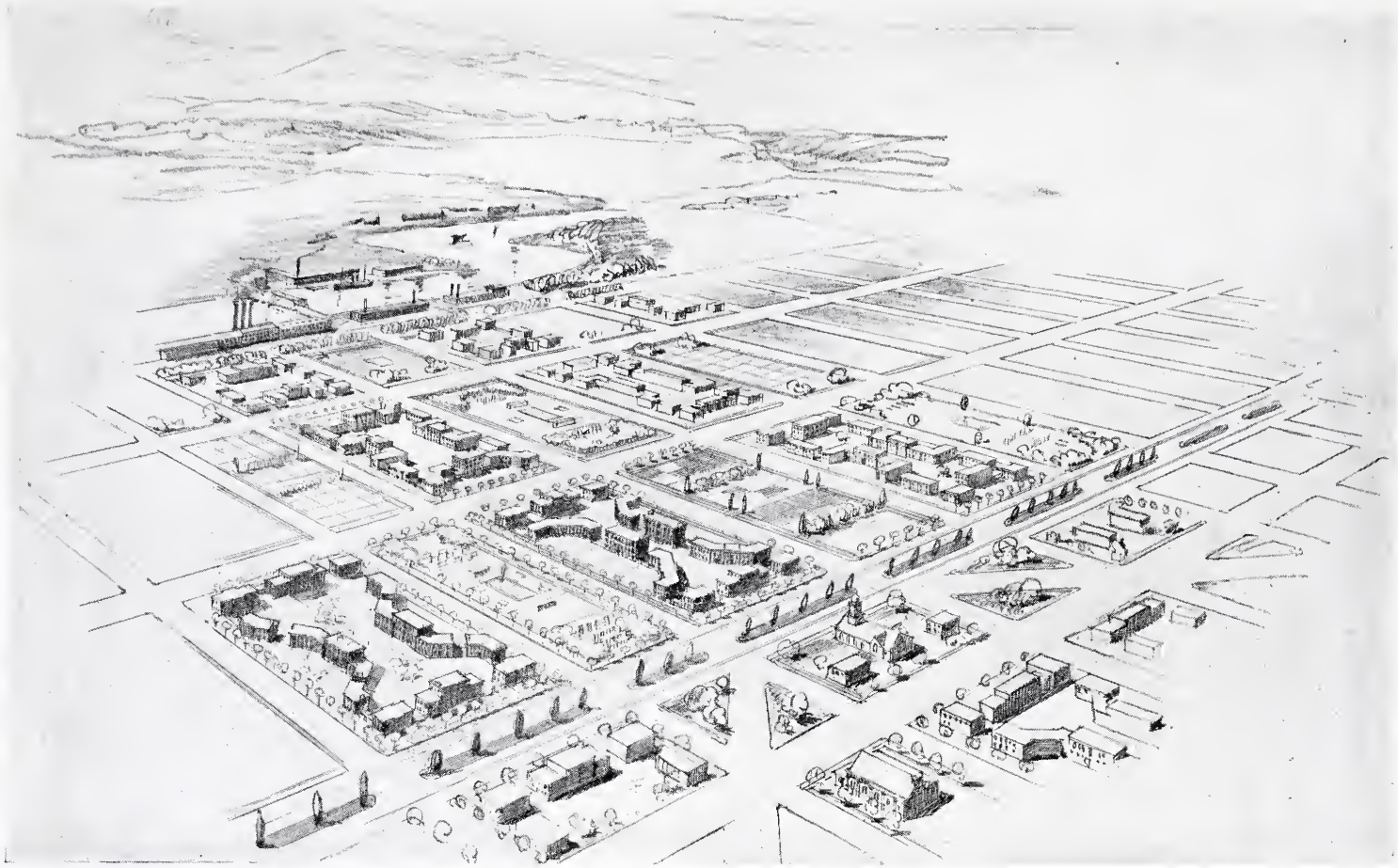


BIRD'S-EYE VIEW (CONVENTIONALIZED FOR COMPARISON) OF A TYPICAL COTTAGE DEVELOPMENT SHOWING THE LIMITED AIR SPACE AND GARDEN SPACE OBTAINED BY SUCH A LAYOUT.

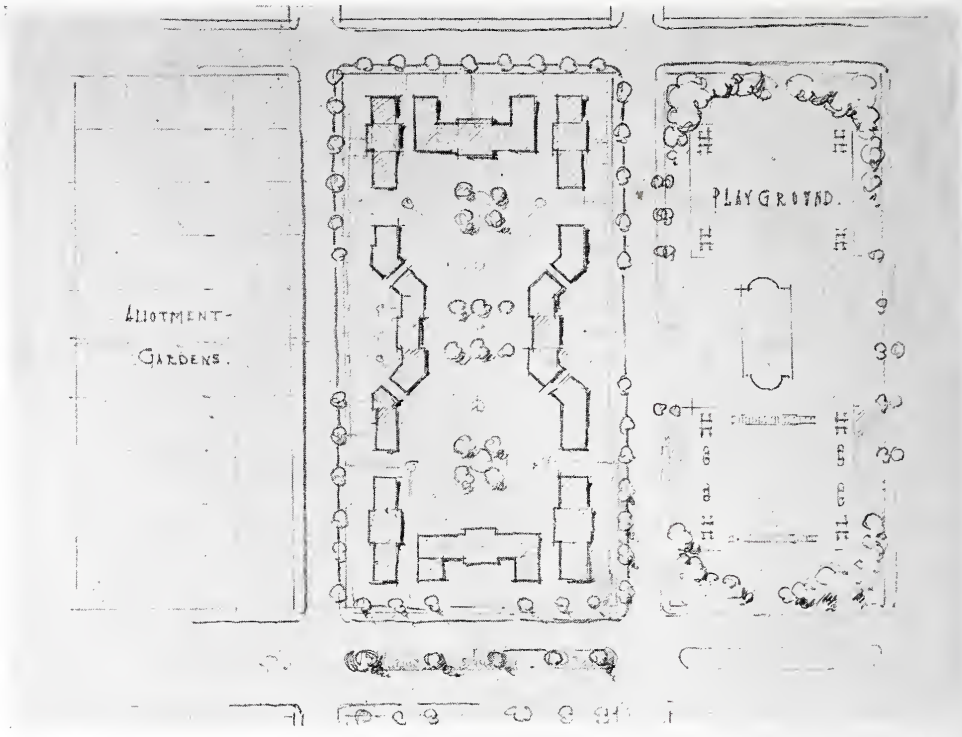
why workers should not purchase the houses no matter of what type, if the local industries should justify; but it must be remembered that the worker today has to bear his proportion of the war's direct and indirect tax, shoulder to shoulder with all the rest of us, so we cannot assume that he will invest his savings now in a house which quite possibly might be in an unsatisfactory location for him and consequently result in a loss to him.

Where corporations are, or ultimately become, responsible for the cost of the workers' homes constructed during the war, they naturally will select a type of house that the large insurance companies and savings banks prefer to loan on. And it can safely be stated that an apartment house type would look much more inviting for a mortgage than an individual house scheme. Considering the large amount of land given up to allotment gardens and all the additional attractions, should the locality need some special accommodation, this can be provided right in the midst of the development and not somewhere a long way off. The unquestioned and demonstrated advantage of the apartment house type of accommodation is so marked, not only as to original cost, rapidity of construction, economy of building material and skilled labor needed in the actual building so vitally important at this time, and also in maintenance or upkeep cost, that it supplies not only what the worker actually wants himself, but what is precisely the best for him from every angle.

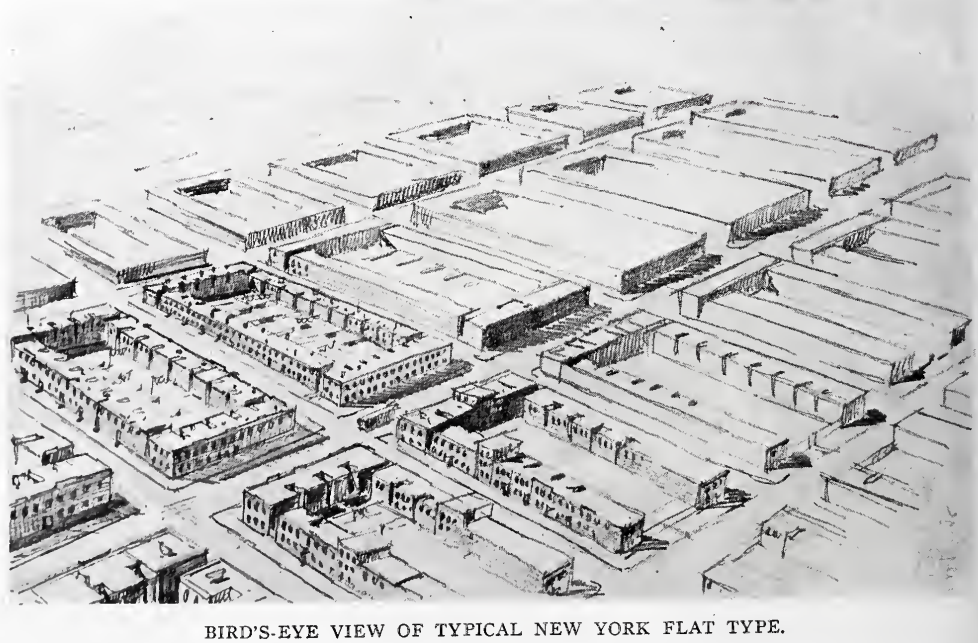
England has definitely learned the lesson and is providing the workers with homes of the collected or intensive type. So, knowing the difference of the temperaments and requirements between the workers here, why not make some use of the knowledge we possess and face the problem squarely and logically by providing housing of the low apartment type, heated and cared for from a central station, with ample playground and garden space all around, and rent them to the workers with the definite understanding that there may be some readjustment as to ownership after the war is over?



BIRD'S-EYE VIEW OF LARGE DEVELOPMENT PROPOSED SHOWING TWO-STORY APARTMENT PLAYGROUND, ALLOTMENT GARDENS, CONSTITUTING A COMPLETE HOUSING COMMUNITY TREATMENT.

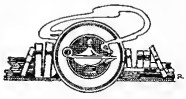


A TYPICAL PLAN OF ONE BLOCK OF TWO-STORY APARTMENTS INDICATING THE GREAT AIR SPACE PROVIDED BY THE METHOD OF HOUSING WORKERS.



BIRD'S-EYE VIEW OF TYPICAL NEW YORK FLAT TYPE.

Two NEW ENGLAND LIBRARIES



By Charles Over Cornelius

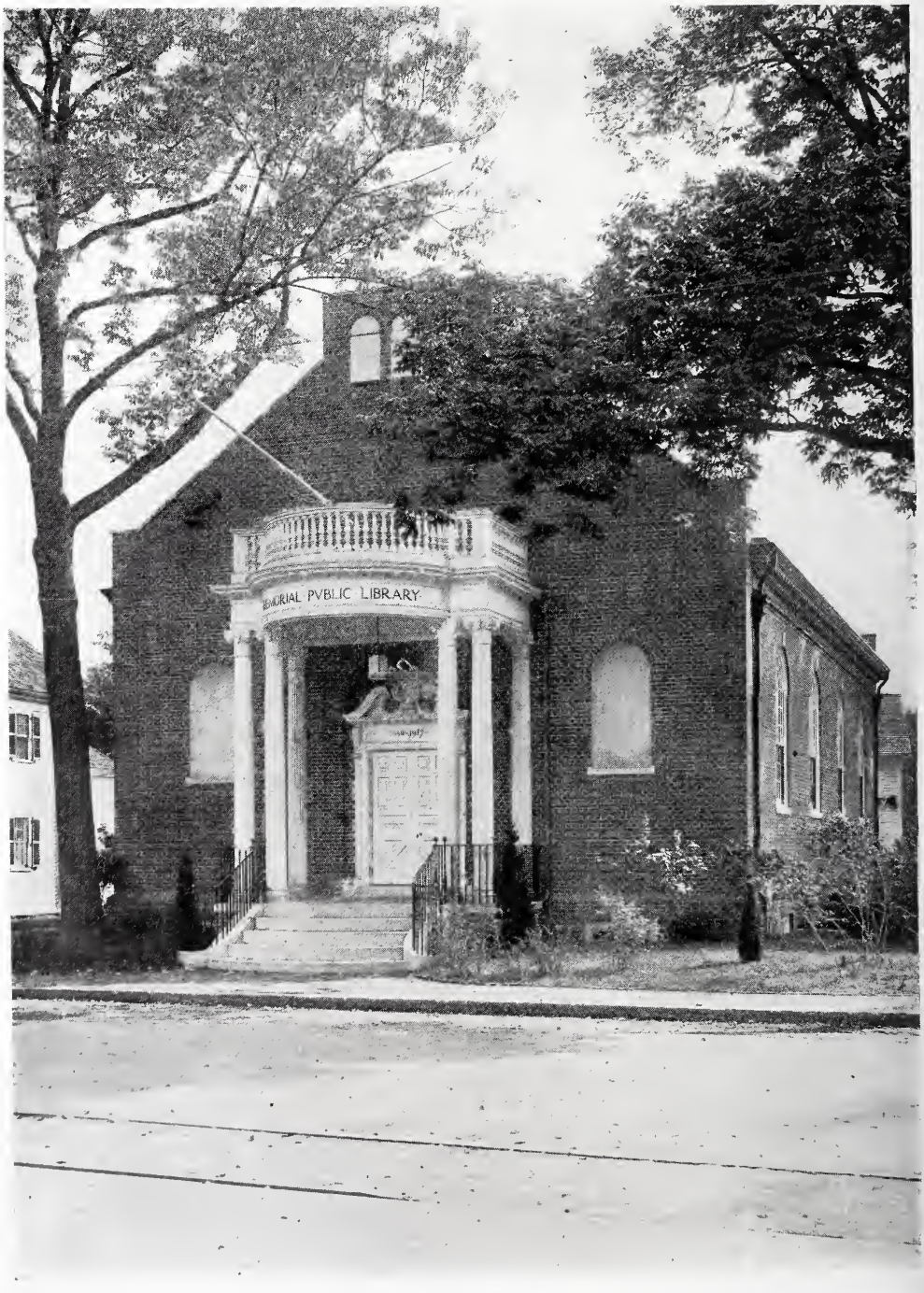
FROM the very beginnings of our government, popular education has been recognized as of prime importance in the development of those ideals for which our country was founded. The necessity, broadly speaking, has been met by the three following types of organization under which are included the various and manifold subdivisions of modern education—the great public school system with its continuation into higher and specialized fields of study, the free public libraries, and the museums of many types. The museums and libraries in the most genuine interpretation of their mission are necessary complements of the school system while serving at the same time the larger general public whose interest is indispensable to their support. As the church points the way for the spiritual growth of man, so does this system of education lead his intellectual development by familiarizing him with all that our present civilization owes to the past in literature, science and art, thus enabling him to build upon established foundations a present and a future which are essential outgrowths of the development of the centuries. It is but natural that such vital institutions as these should find appropriate and general expression in contemporary architecture, and many of the most interesting competitions of recent years have centered around one of these three problems.

Some one has rightly said that "a great library, like a temple or cathedral, is one of the rarest commissions that can come to an architect." Equally true it is that the smaller library of a less pretentious community should take equal rank with the parish church as a point of local pride and interest, and should typify the intellectual heritage of its town in as great a degree as the churches of that town embody visibly its spirituality.

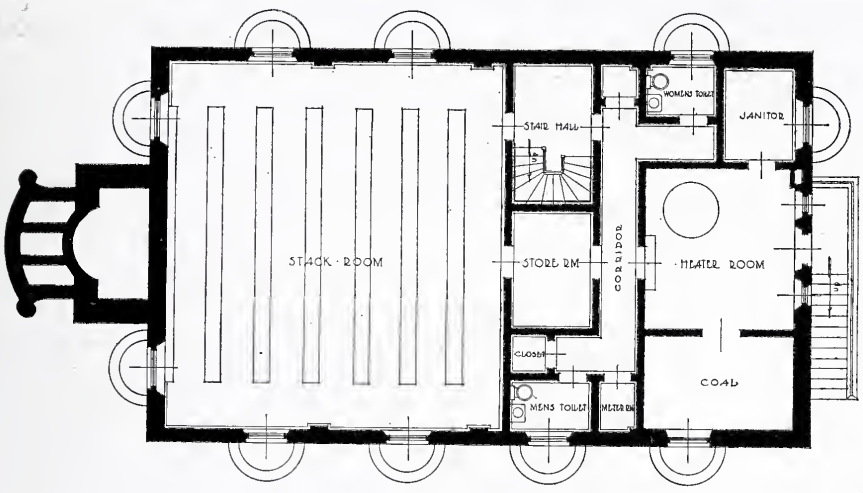
Two modest libraries of representative New England towns are presented by the accompanying photographs, and they should be considered in relation to the great general scheme of public education as well as in their purely local and individual aspects. The problems of both hold certain points in common: the relatively small public which each has to serve, the necessity for economy in construction as well as reduction of overhead in administration, a reasonable allowance for future growth in book space, and a common heritage of architectural character from a New England ancestry. The individual solutions are interesting in showing to what an extent two problems, the majority of whose basic requirements are the same, take on an individual character as a result of purely local conditions.

In the Dailey Memorial Public Library, at Medfield, Massachusetts, William G. Perry, architect, there are present all the usual demands of a small town library. There is also the requirement of an appropriate room for the local Historical Society, where documents and other objects of historical interest may be exhibited and consulted. The building thus partakes to some extent of the qualities of both a museum and a library; while the hours when the library is open—from four until nine o'clock—fit in well with its usefulness to the schools of the community.

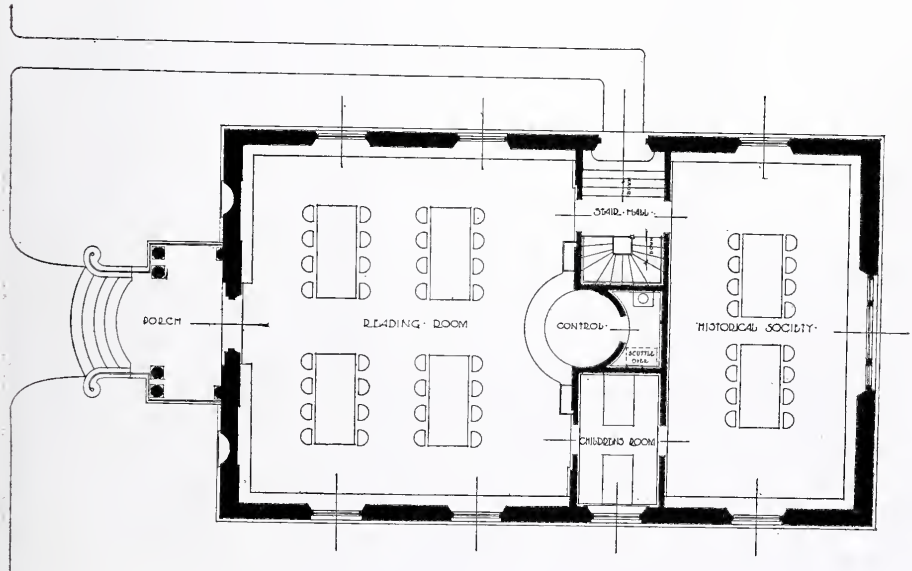
The plan of the building, which faces northwest, is a simple rectangular one,



DAILEY MEMORIAL PUBLIC LIBRARY, MEDFIELD, MASS. WILLIAM G. PERRY, ARCHITECT.



· BASEMENT PLAN ·



· FIRST FLOOR PLAN ·

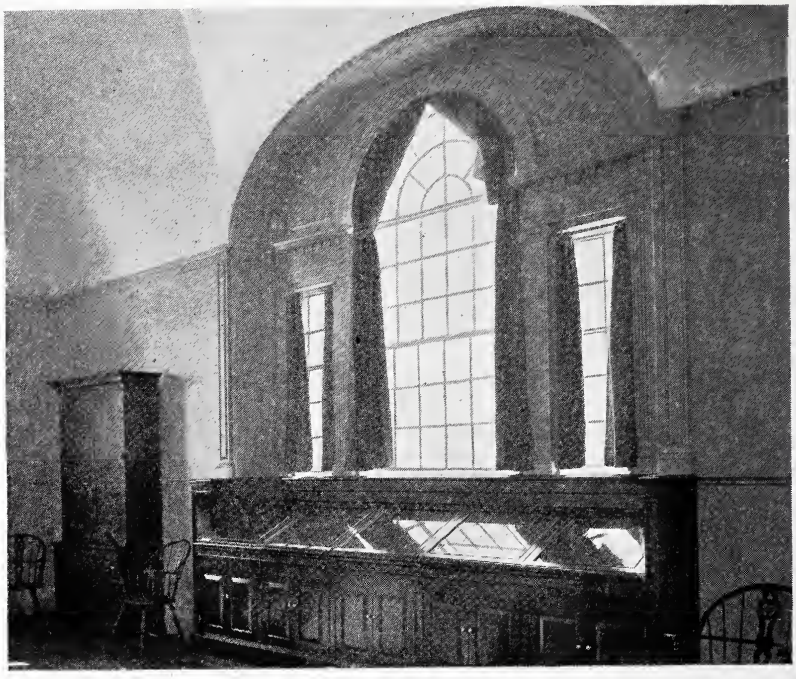
GROUND FLOOR AND BASEMENT PLANS—DAILEY MEMORIAL PUBLIC LIBRARY, MEDFIELD, MASS.
William G. Perry, Architect.



ENTRANCE—DAILEY MEMORIAL PUBLIC LIBRARY,
MEDFIELD, MASS. WILLIAM G. PERRY, ARCHITECT.



DAILEY MEMORIAL PUBLIC LIBRARY, MEDFIELD MASS. WILLIAM G. PERRY, ARCHITECT.



HISTORICAL SOCIETY ROOM.



MAIN READING ROOM—DAILEY MEMORIAL PUBLIC LIBRARY, MEDFIELD, MASS.
William G. Perry, Architect.

in which the main reading room occupies the major part of the floor space, with the control placed to advantage directly opposite the entrance. The fenestration of this room is most happy, introducing light from only two directions, and those from either side of the readers at the tables. The narrow space which girds the middle of the building is utilized on one side for the private entrance to the Historical Society, with the necessary stairway to the basement stack room and services, and on the other side for the children's reading room, which is thus lighted from the southwest. The remaining space on this floor is taken up by the well-proportioned room of the Historical Society. The chief criticism of this floor plan lies in the placing of the children's room where it is not in direct vision of the control desk. The necessity of having every nook and corner of the section devoted to the children in plain sight of the control desk at all times has been discovered from the past experience of librarians; yet the psychological gain to the children from the removal of this restraint of supervision may more than compensate for any injury to the books which might result from careless or willful mishandling.

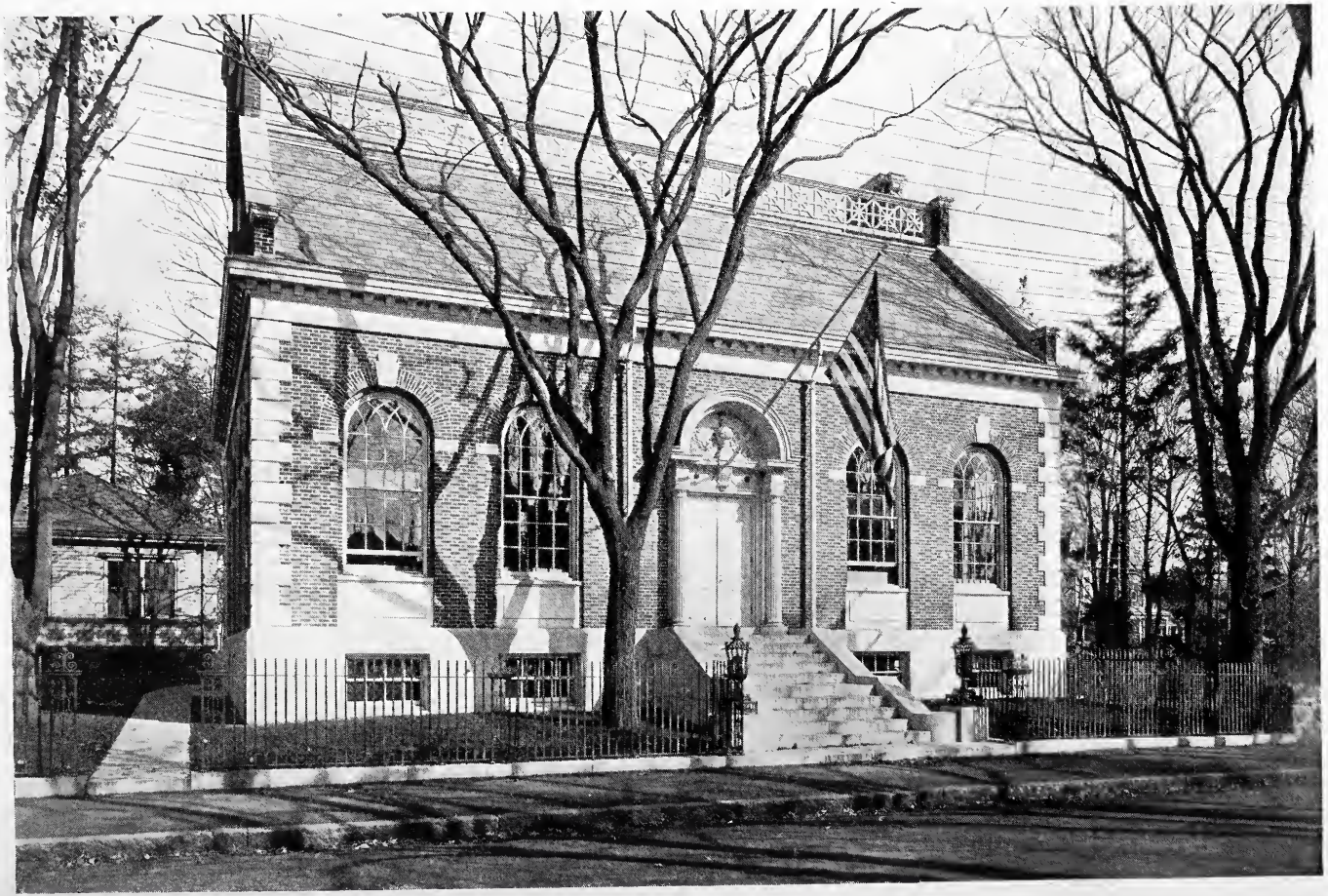
In the basement a very generous allotment of space has been made for the stack room—as yet not in use—and conveniently placed service dependencies are so arranged as to receive adequate light, while the heater room may be reached by a special entrance from the outside.

This straightforward plan is frankly expressed on the exterior by the four straight walls and simple hip roof. The most striking innovation, and the one most worthy of note, has been the placing of the building on the lot with its narrow gable end toward the street, making this elevation the entrance front. The result imparts a distinct flavor harking back into the past. This elevation has been simply and boldly treated, the whole interest being concentrated in the entrance porch whose form is happily chosen, while the flat niches relieve the plain wall spaces on either side. The silhouettes, both of the whole elevation against the sky and of the porch against and darker wall, are very pleasing. A certain dignity and impressiveness has resulted from the treatment of the portico beyond that which would have come from a more delicate handling of the same composition, although the surmounting balustrade might have been heightened in its effect by a wider spacing of the balusters and a greater lightness in their form. The brick arch above the entrance door forms a pleasing and inobvious contrast to the other adjacent curves, while the iron railings and sparse evergreens supply the requisite accents and add to the very inviting aspect of the entrance.

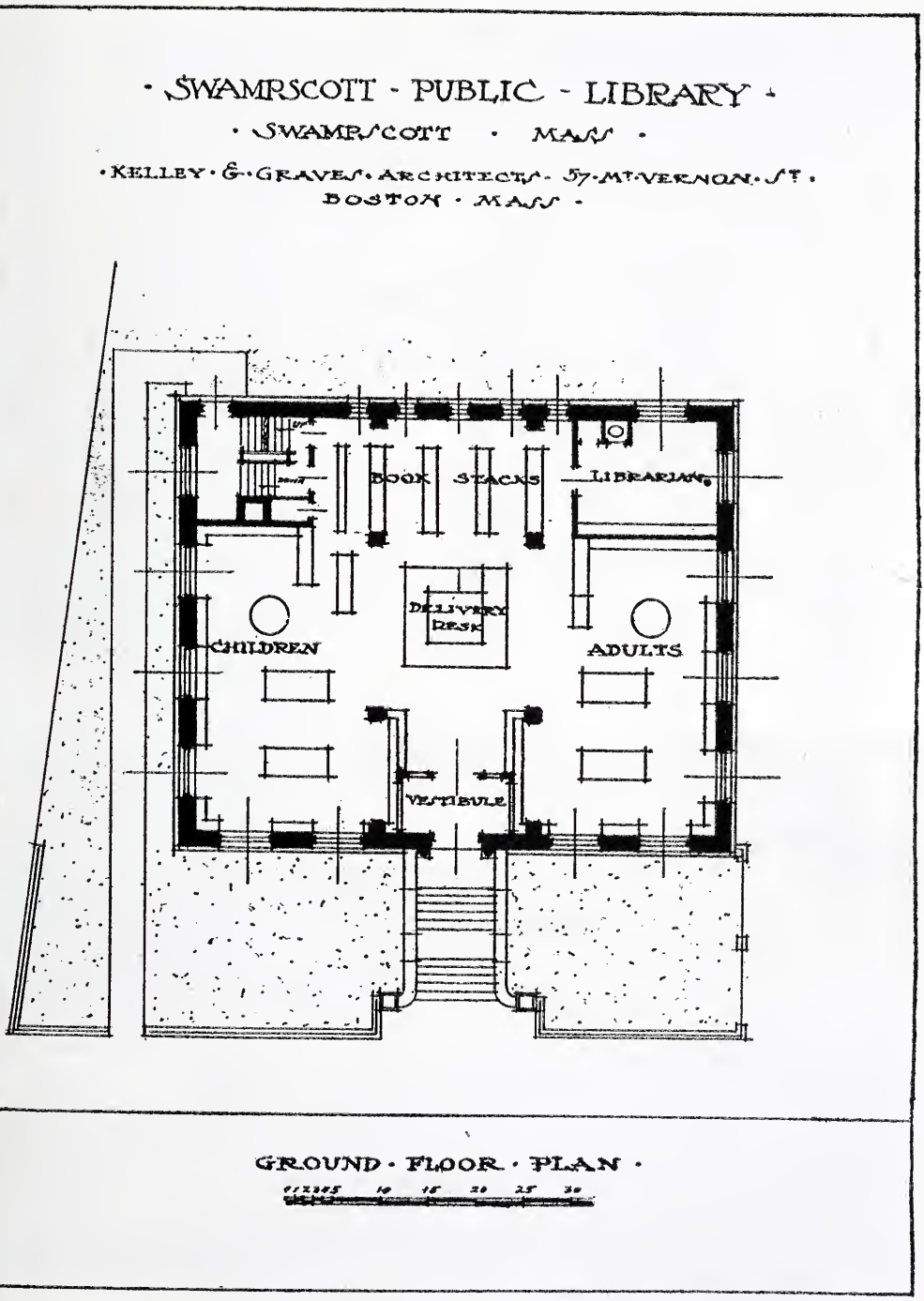
The side elevations are simply treated with symmetrically spaced window openings, and on the rear elevation a large Palladian window admits ample light to the Historical Society room, marking its special use. The materials of the exterior are soft-hued red brick, limestone and painted wood. The brick is laid with alternating rows of headers, in the early American manner, giving an interesting texture.

The main reading room is entered directly from the street. The general wall treatment in this room follows closely Colonial precedent, the three wall arches with the central semi-dome and its memorial tablet supplying that dignity demanded by an interior, part of whose function is to express its memorial quality. The entrance doorway is interesting, with the splayed jamb and soffit of the large arch and the heightening of the carved decoration of the doorhead by gilding. The color in this room is light French gray in varying tones, resulting in a cool and reposeful atmosphere in which the silk-shaded lamps form an intimate note. The catalogue cases have been conveniently placed at right and left of the desk, obviating any disturbance to readers in the selection and obtaining of books, while bookcases continue the line around the room and form an integral part of the decorative layout.

The staff of the library consists of a librarian and one assistant, who do not exercise any control over the Historical Society room.



SWAMPSCOTT (MASS.) PUBLIC LIBRARY.
KELLEY & GRAVES, ARCHITECTS.



GROUND FLOOR PLAN—SWAMPSCOTT (MASS.) PUBLIC LIBRARY. KELLEY & GRAVES, ARCHITECTS.



ENTRANCE—SWAMPSCOTT (MASS.) PUBLIC LIBRARY. KELLEY & GRAVES, ARCHITECTS.

The second building illustrated is the Swampscott Public Library, of Swampscott, Massachusetts, Kelley and Graves, architects. Here the physical obstacles have been greater than those encountered in the Dailey Memorial Library, and a proportionate praise should be given to the thoughtful and effective manner in which the various difficulties have been overcome by the architects.

It was first necessary to place the building agreeably upon the lot, which, being quite narrow, and with its side boundaries converging sharply toward the rear, led to the location of the structure close to the front lot line in order to obtain the fullest advantage from such frontage as was available. A further economy of space is observed in the mounting of the wrought iron fence on its granite curb and continuing it back to the building along the lot line.

The general plan is rectangular, almost square, and its arrangement is greatly to be commended. A small entrance vestibule admits directly into the main reading room, which forms practically the whole of the public space. The control desk is placed far enough out in the centre of the floor to make possible direct supervision by one person of all parts of both the children's and adults' reading rooms. The public, entering by the main door, has access immediately to practically all of the building except those parts reserved for the administration.

In the basement, which has its special service entrance at the rear, provision has been made for a future newspaper and periodical reading room, while the remaining space is taken up with the usual lavatories and toilets, workroom, storage and general service. In the second story, space has been arranged which may be utilized at some future time as a lecture room or exhibition gallery.

The longer side of the building faces the street, with the roof ridge running parallel to this line. The composition of this façade presents few unusual features, its four symmetrically spaced windows and central entrance typifying an arrangement of wall spaces and openings which has become almost synonymous with library. The principal variation of the theme lies in the heightening of the basement course in order to admit ample windows, and in the long, graceful flight of steps which adds to the dignity of the whole. The entrance doorway is a free rendering of a conventional type and would not have suffered from a greater refinement in certain detail—notably in the Georgian substitute for the dentil course of the order. There is a slight overemphasis upon the verticals, which are insistent in the lines of the windows, the corner coins, the columns of the doorway and the water leaders; while the contrast in the materials of the building and the related ironwork do not quite compensate for the lack of light and shade. The urns at the foot of the ramp, however, are delightful and add tremendously to the effect of focusing the interest in the centre of the composition.

In the finish of the main reading room all elements which might tend to distract have been carefully eliminated, and the result is a quiet and harmonious atmosphere so essential to a library. The woodwork throughout is simply treated gumwood stained to a soft brown, while the walls are in warm russets that harmonize well with the tone of the wood. Bookcases line the walls to a convenient height and, with the metal stacks, newspaper and periodical files, give a shelf capacity for about twenty thousand volumes. The ample windows flood the room with light by day, and at night the hanging lamps, wall lights and table lamps furnish adequate illumination both concentrated and diffused.

The genuine success of this building lies in its thoughtful and well-studied planning, which demonstrates noteworthily that in proper hands a very moderately sized building may be rendered adequate for the needs of a fairly large community. If the exterior has suffered somewhat from the necessity of enclosing so many varied units in three stories, the result in the interior has more than justified such slight sacrifice as has been made.

These two libraries may be considered representative of a large group of buildings rising throughout the country in the



SWAMPSCOTT (MASS.) PUBLIC LIBRARY.
Kelley & Graves, Architects.

wake of a more widespread popular education. Ample provision has been made in the planning of each for the children who, it is hoped, will use the building constantly, and the easy access to the book and periodical collections should encourage their use by the general public. The employment of monumental materials, the careful observance of taste and study in the design and decoration, and the adoption of an historical style that is associated with the New England town all contribute to a dignity commensurate with the position which the free library, whether great or small, holds in the public estimation.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

Part IX.—a

IN all periods the chimneypiece forms the main feature of an apartment and is usually centralized on one side of the room or, as in the Hampton Court Palace state rooms, in the angle. The variations in design are numerous and it would take many articles to exhaust even the typical ones. I therefore propose to deal with a few representative examples, in order to illustrate the methods of building up of the several designs and the general treatment of detail in the periods selected.

It should be mentioned that the style or character of a chimneypiece is not necessarily any criterion directing one to date the room, as in very many instances they are of earlier or later introduction unless designed expressly for the position they occupy.

It does, however, frequently occur that the whole room is *en suite*, and in such cases I have invariably endeavored hitherto to give the whole side of the room.

The materials employed in the Elizabethan or Tudor period for the mantel and overmantel were usually stone; and in the Jacobean era, oak, stone and marble, having carved figures, niches, columns, arabesques, etc., with some exceptions where painting formed the chief decorative medium, as in the case of the Kidderminster library attached to Langley Church, in which deal groundwork appears to have been employed. The general wall paneling in this instance is colored chocolate and white for muntins, stiles, rails, etc., surrounding grisailles and painted panels of local scenes and celebrities. The chimneypiece contains a painted frieze bed-mold to the mantel-shelf, with large oval panel over with the four seasons painted in the four corners formed by the square panel and its oval centre. The raised portions of moldings are gilt to emphasize their features, and the whole is very rich in coloring.

At Bampfylde House, Exeter, the chimneypiece is restored and the central coat of arms emblazoned in its original hues of heraldic color.

At Mersea there is a simple and interesting example of Jacobean period chimneypiece, with triple columns over the mantel-shelf and curious moldings forming the square and diamond-shaped panels.

Many Jacobean chimneypieces exist in London and vicinity, of various types, as at the Charterhouse, Canonbury Towers, and formerly old Bromley-by-Bow Palace, not to speak of the famous country mansions, as Blickley Hall, Hatfield House, Bolsover, Knole, Hampton Court Palace, etc. These nearly all followed one main principle of design, having columns below and above the mantel-shelf and a large convex carved or inlaid bed-mold to the shelf, often with brackets or key blocks after the manner adopted by masons. Many are very richly ornamented with carving and figures; black, white and colored marbles were freely introduced. They were lofty in design and structure and somewhat heavily molded and corniced, especially the overmantels. Inlays and insets of special, rare marbles were not infrequent, as the Irish blue-john and lapis lazuli, etc., set in jewel formation and polished.

Various designs in arabesque fretwork patterns are found in the friezes, and columns are extant, having a scroll inlay of thin papier-mâché or wood shavings. De Vries quaint strapwork was vented extensively and occupied most of the available spaces for such decoration or ornament. The surmountings of bedsteads and monuments were similarly adorned, and it became a typical cult of that era of architecture.

The truer expression of the Renaissance was introduced by Inigo Jones, who put aside the Flemish models in favor of pure Palladian principles. He combined marble with wood painted and gilt for his chimneypieces in some very elegant designs. In lieu of carving he adopted a species of composition for pendants, festoons and figures, usually colored white and gold, as at Wilton House, Greenwich, Rainham and Coleshill.

The chimneypieces illustrated from the Queen's House, Greenwich, which was a work of Inigo Jones in 1639 for Henrietta Maria, would on examination appear to be a later addition, probably when the transomed windows were replaced with double-hung sashes. It is probably of the Chippendale period or mid-eighteenth century, according to the nature of the carving.

During the first half of the seventeenth century a very extensive trade was carried on in London in the manufacture of chimneypieces by masons for delivery to the various country and provincial seats in course of erection, as well as garden ornaments and sculpture. Our predecessors were evidently as fastidious as to the niceties of these things then as we profess to be today and great care was taken in their execution.

The surveyor or architect would prepare the design, or "draft" as it was then called, which was full-sized, on boards for the mason's employees to work from in the atelier. But as often as not a contract was entered into as to cost for a cerain number of chimneypieces, and discretionary powers were conferred upon the mason, if he was of well known ability, as Nicholas Stone and his sons were. These masons worked also in wood and iron and contracted for wainscoting and fencing with armorial bearings and paintings, etc. Stone himself employed Eustace Le Sueur and Cibber in their early years, and his son John is said to have had dealings with Grinling Gibbons when a young man. There was a carver of the name of Gibbons employed by Inigo Jones on staircases, but I have been unable to trace any relationship between the two. Stone's relatives, Bernard Janssens and Gabriel Staces, collaborated with him in many works, the latter chiefly acting as agent for his jobs in the Oxfordshire district.

Within a few decades the chimneypiece—always maintaining its supremacy as a decorative feature—became the all-absorbing object when oak and limewood carving were lavishly disposed about the overmantel, as at Hampton Court Palace, Chatsworth, Belton and a host of the Wren period examples, where Grinling Gibbons, Samuel Watson, Selden, Quellin and others vied their skill and ability at inventiveness in the cult of the chisel.

The deep undercutting nearly exceeded the strength of the wood used for carving to the point of utmost frailty in order to obtain delicate naturalistic effect and a true rendering of the various objects portrayed from land, sea and air.

One of the finest pieces of carving at Belton is the cock on the left of the dining room overmantel, and nearly comes up to the game and cravat Gibbons carved for Chatsworth, as evidence of the master mind among so much competitive enrichment by a clever rival. The cock, by the way, has for generations been the ambition of the carver to depict in its varied phases, as instance a remarkable Jacobean example in an obscure church at Bredon, Worcestershire, which terminates a lofty monument dedicated to George Reed, and the many church vanes which have for generations been ornamented with a weathercock in all the glory of its flowing lines—the head erect, beak open in attitude of crowing, and the magnificent curl of the tail of this superior bird, all of which fascinated the minds of the craftsmen; but at Belton the tables are turned—there is no action, the cock is dead. The sculptor depicts the stillness of death with the dishevelled feathers, comb awry, but withal a prize cock. When seen, one cannot suppress the expression, "What a fine bird!" Such was the genius of Gibbons; but at Chatsworth the visitor is shown a quill pen carved in wood by Watson and a violin painted on the door below by Verrio as the masterpieces of these men. When I saw these I thought

of that other famous instance of skill, by the madman Wiertz at his museum at Brussels, of a dog in its kennel painted on the wall in the most speaking likeness of the subject.

Undoubtedly there was keen rivalry in skill between the artists of those days in the several crafts; and while there was more boldness of execution and undercutting than had previously obtained, the designs remained original and effective.

The work of Samuel Watson and his compeers at Chatsworth followed the type of Grinling Gibbons at Petworth, Holme Lacy, Belton and Hampton Court Palace, except that the parquetry work is more in evidence, showing the fine art to which joinery had attained; while the carved panels over marble architraves to the chimneypieces give an added interest and finish to the general scheme.



JACOBEAN CHIMNEYPIECE AND FIREPLACE, CANONBURY HOUSE, ISLINGTON.

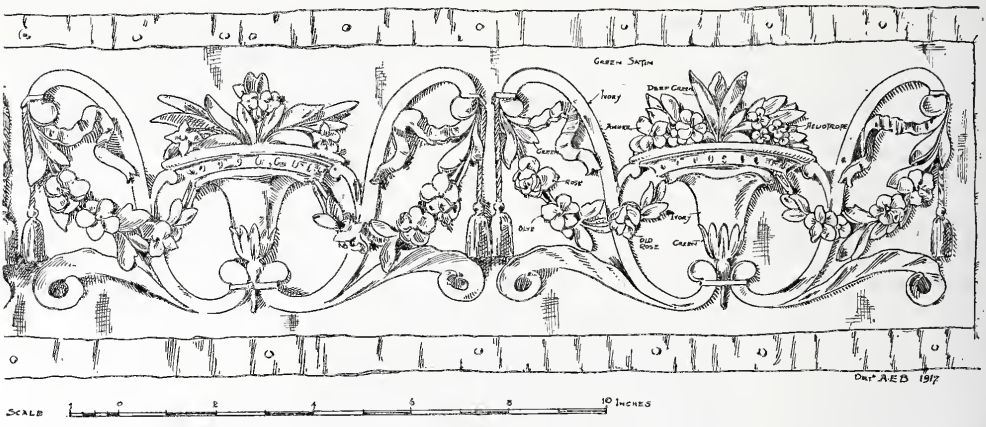
So sumptuous are the rooms in their completeness of design and execution, that they excel, to my mind, anything in England of the period or after it.

With the age of William Kent, Ripley, Colin Campbell, Payne and others, of the Lord Burlington school of architects, the overmantel was ornamented and emphasized in a marked degree, as at the Board of Trade Offices, Whitehall, and at Chiswick House, Holkham Hall and elsewhere; but at Moor Park, Leoni has designed this feature of more Italian type with marble amorini and other evidences of sculptural skill.

With the Adams period more attention was centred upon the mantel proper—the overmantel frequently taking an independent design, holding a mirror or other paneled feature of specially designed furniture. In these cases marble was the chief medium, with plaques having classic subjects modeled or carved in slight relief, usually upon a heliotrope ground, or inlays of colored marbles. Fine-grained and rare marbles were much sought after—white statuary, pink, green and other tones that would harmonize with the color scheme of the apartment.

The period known as English Empire was synonymous with Adam work, but was chiefly confined to objects of art as the blue and black jasperware of Wedgwood fame and certain candelabra with gilt composition ornament upon a royal red or deep green ground. The motifs were pure Greek detail, of a delicate nature and refined design, the general forms being very graceful. Wedgwood was a contemporary of Adam, Robert Adam being born in 1728 and Wedgwood in 1731. Sir William Chambers was another contemporary architect, some two years older than Adam. One of the chief modelers employed by Robert Adams in bas-relief was Giuseppe Geracchi, who came to England in 1773, returning in 1801, some nine years after the death of the elder Adam, to Paris, whence he hailed.

Sir John Taylor practiced in the Italian and Sir John Soane in the Greek manner; the latter embraced in his collection of casts a number of examples of the work of John Flaxman, R. A. Both the civic and ecclesiastical work of



CARVED MID-ADAM PERIOD FRIEZE (COLORED).
In Possession of J. A. Bennett, Esq.

Soane were of classic design, but with Sir Charles Barry the two were distinctive. He practiced Gothic work for his churches and the Italian manner for his clubhouses and mansions. The chimneypiece in the hall of Bridgewater House is an instance of the simple, solid nature of the designs adopted by Barry. That in the hall of the Surgeons' College is an earlier example brought from the old War Office and inserted there. It savors of the type practiced by William Kent.

The fireplaces of the later Georgian era were of little interest. Those designed by Sir John Soane were of stereotyped design, of headed moldings blocked at angles in lieu of mitering. With Sir Charles Barry a more varied type is noticeable, especially at the Travellers' Club, Pall Mall, where in the library there exists a more florid example than was usual with him.

The designs of silver and electroplated Sheffield ware hardly come within the province of these articles; but some very interesting designs were executed for candlesticks, urns, cups and vases in the early Georgian and Adam periods, in keeping with the designs of the age. In Adam times the ram's head was a favorite motif at salient angles, and convex fluting was frequently resorted to. The work of William Young is particularly notable in this connection; he was a famous silversmith of the latter half of the eighteenth century.

It has previously been shown that the early years of the nineteenth century were void of lasting originality or artistic taste in ornament. Toward the middle of the century the work of the late Alfred Stevens became noted. He designed among other things a chimneypiece in marble for Dorchester House, Park Lane, of which the original full-sized model exists in the Victoria and Albert Museum, London. This shows a careful studying of parts and grouping far in advance of contemporary art.

More modern chimneypieces either followed the dictates of French design or of one of the preceding English periods, of which the William and Mary and Adam periods were preferred, with two notable exceptions in the work of George Devey and Norman Shaw, who exhibited considerable ingenuity in their designs of this feature.

Some of the photographs here given illustrate modern examples, as that from Lindsey House, Chelsea, which is a good Grinling Gibbons copy, and the French type from Hill Street of Louis Sieze period.

I propose to give also a recent country-house type from a residence at Boxmoor, Herts, designed on Georgian lines, with metal interior specially cast and an oak inglenook with settees. It will be seen by comparison what a vast field of design and building up is covered by this one central decorative feature, the variations of which are unlimited, except by

the expenditure and labor involved in their execution.

Since the fireplace is the centre of interest, it can make or mar a room by its harmony or incongruity with local environment. It therefore behooves one to make very careful selection in dealing with this important feature, especially when the chimneypiece is an importation and not part of the originally designed scheme.

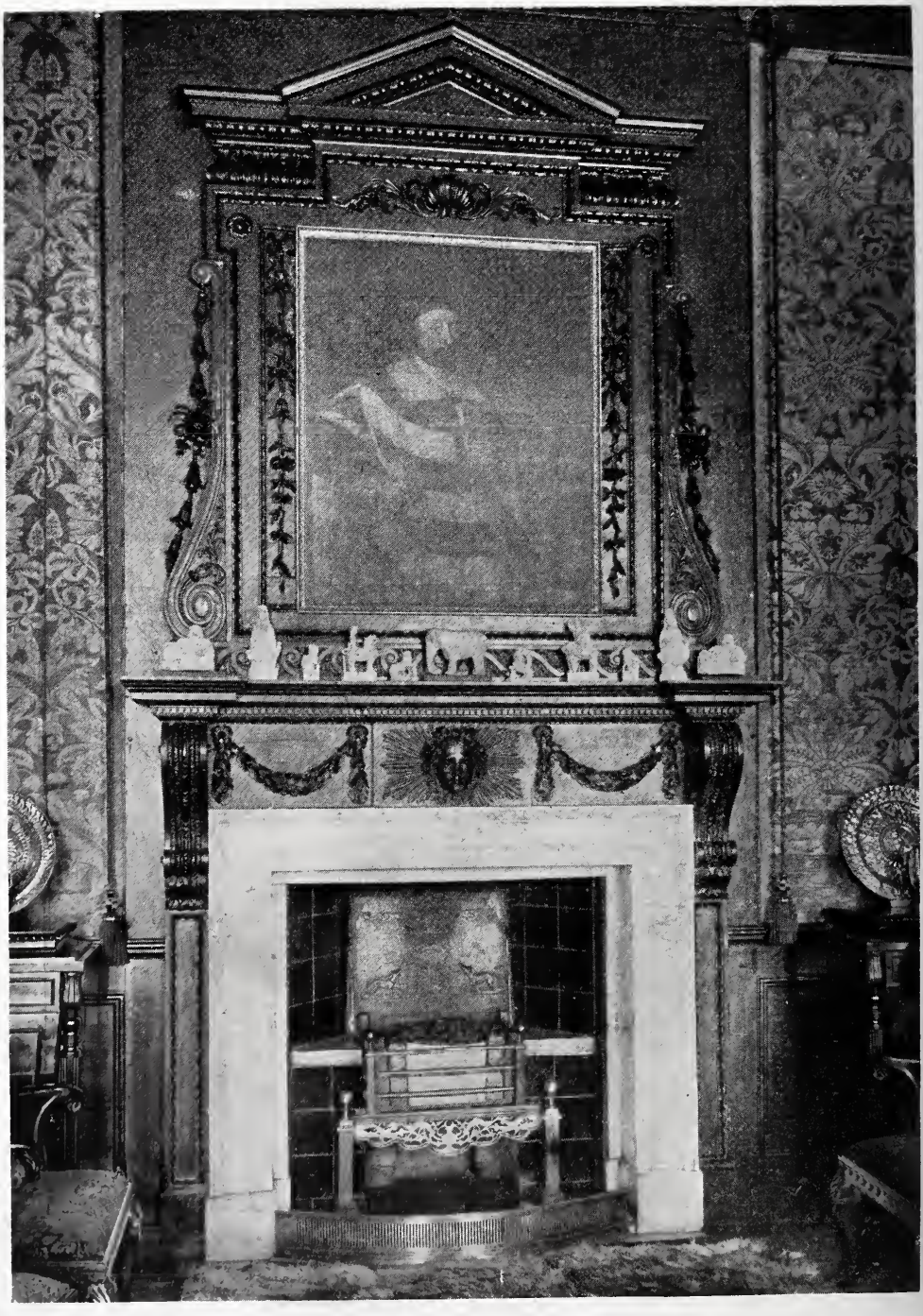
There is in America at the moment a special danger of this hybridization, from the fact that England is the main source of supply of many of the chimneypieces imported there in recent years, which, although excellent in themselves, require a special knowledge of the correct surroundings to satisfactorily adapt. Most of these imported fireplaces are of Adam or Georgian design in marble or carved wood; many are copies from original examples in famous houses and in consequence the artists' hands are tied to one or two periods in adapting the feature if they would avoid transgressing against the canons of good taste.

In presenting this chapter of my articles, I trust the sketches and photographs here given will be found useful, and would draw special attention to the angle chimneypieces from Hampton Court Palace, which render the exhibition of china and works of art a matter of original simplicity.

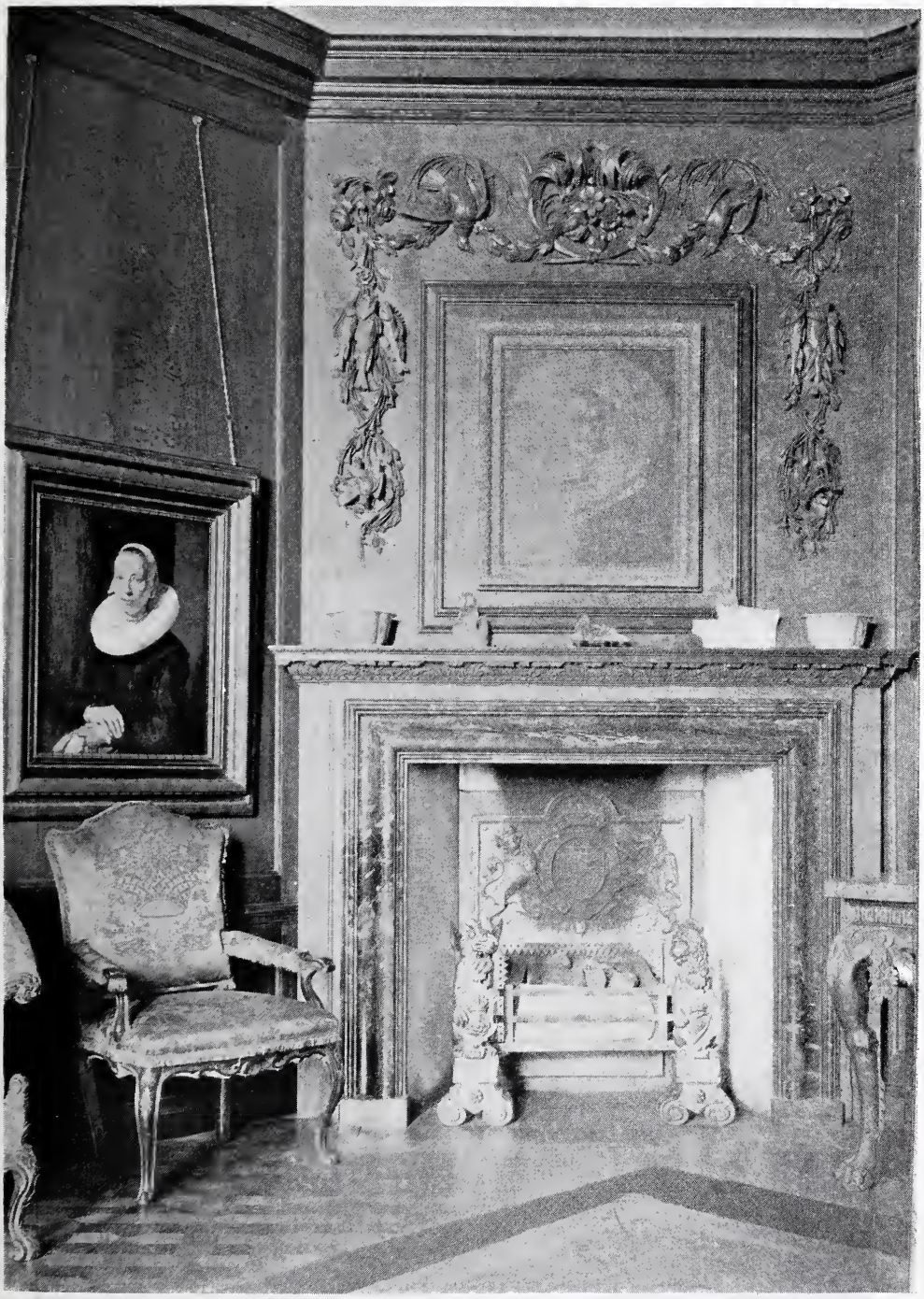
N. B.—As it is not possible to give the whole of illustrations mentioned here they will form a second part, IX—b.



ADAM PERIOD CEILING—BEDROOM AT THE PYNES, DEVON.



BRYMPTON D'EVERCY, CHIMNEYPIECE,
CHAMBERS PERIOD, OR LATE CHARLES I.



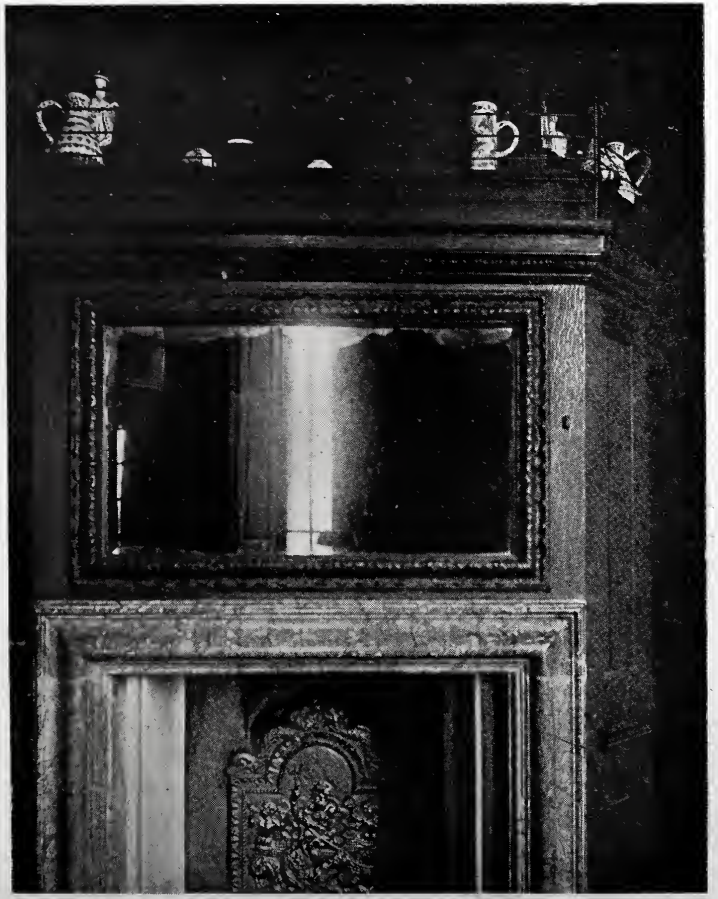
RESTORED CHIMNEYPIECE FROM LINDSAY HOUSE, CHELSEA, WILLIAM AND MARY PERIOD.



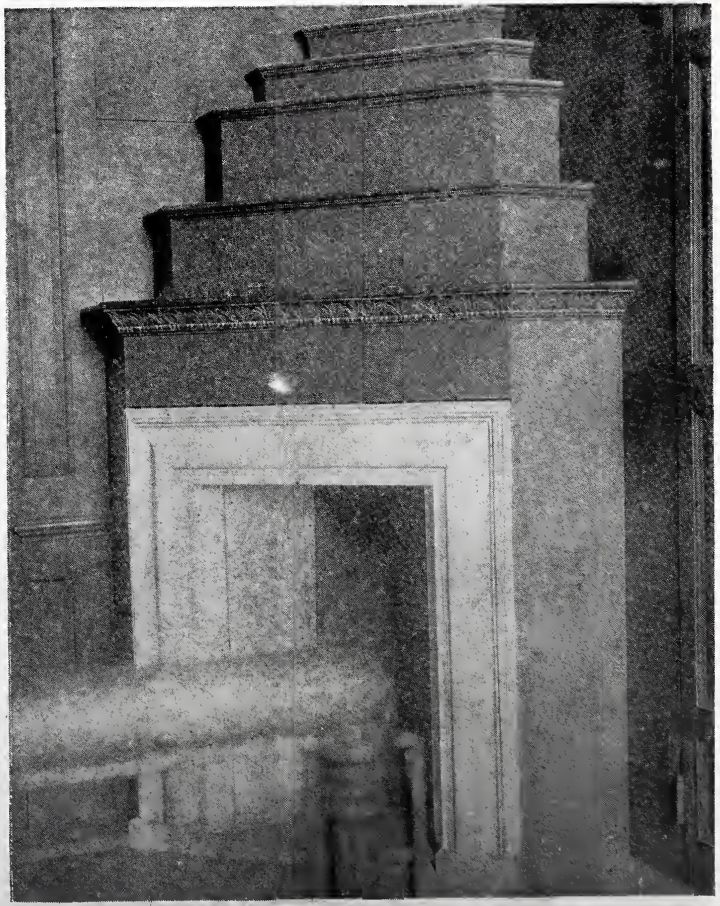
TUDOR CHIMNEYPIECE—THE RED LODGE, PARK ROAD, BRISTOL.



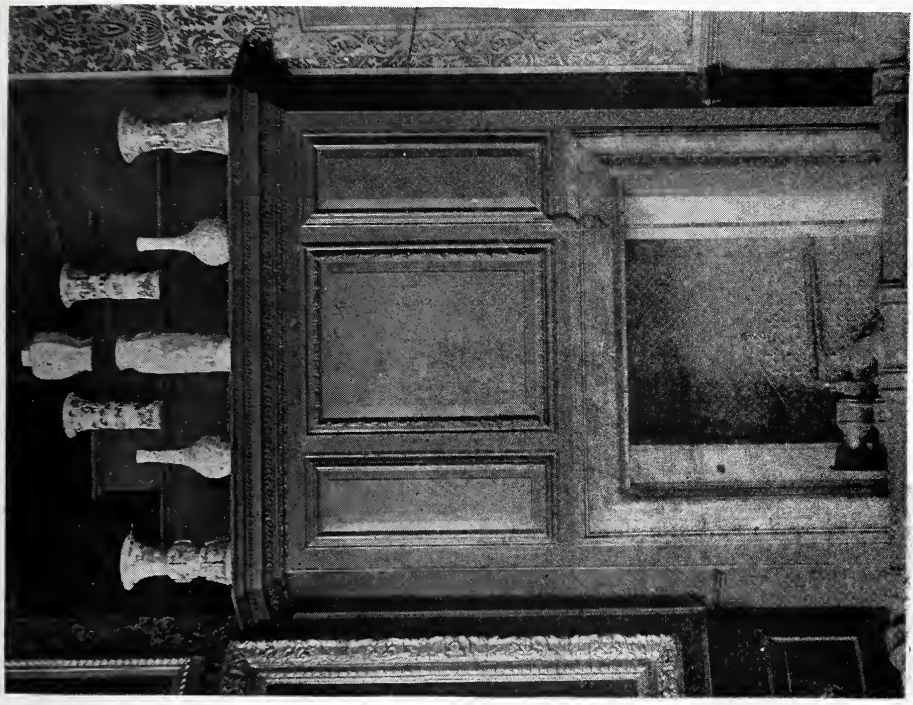
CARVED OVERMANTEL—DINING ROOM,
BELTON HOUSE, NEAR GRANTHAM.



ANGLE CHIMNEYPIECE—HAMPTON COURT PALACE. WILLIAM AND MARY PERIOD.



ANGLE CHIMNEYPIECE—HAMPTON COURT PALACE. WILLIAM AND MARY PERIOD.



ANGLE CHIMNEYPIECE—HAMPTON COURT PALACE. WILLIAM AND MARY PERIOD.



ANGLE CHIMNEYPIECE—HAMPTON COURT PALACE—WILLIAM AND MARY PERIOD.

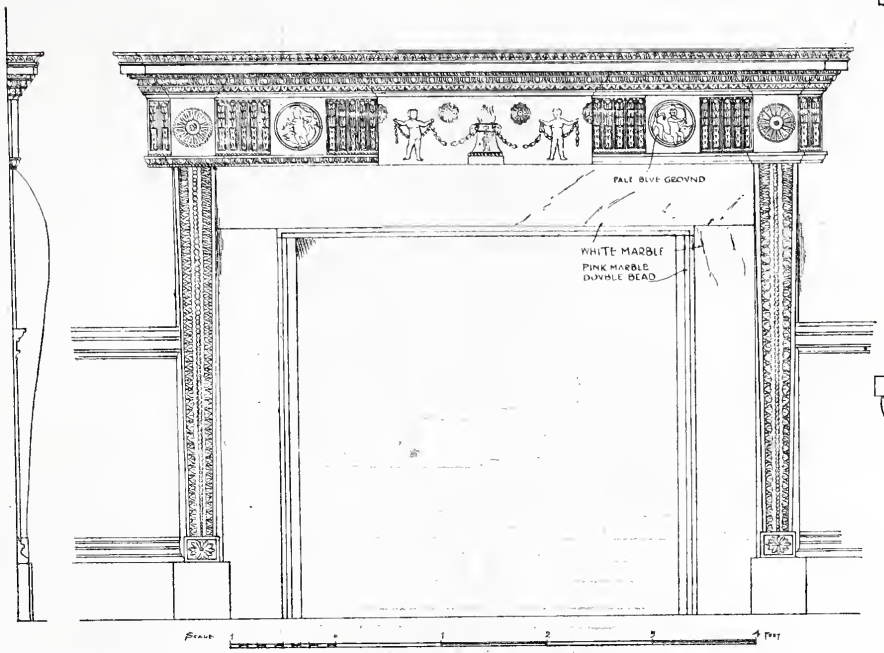


FIREPLACE IN TREASURY OFFICE—WHITEHALL, LONDON.

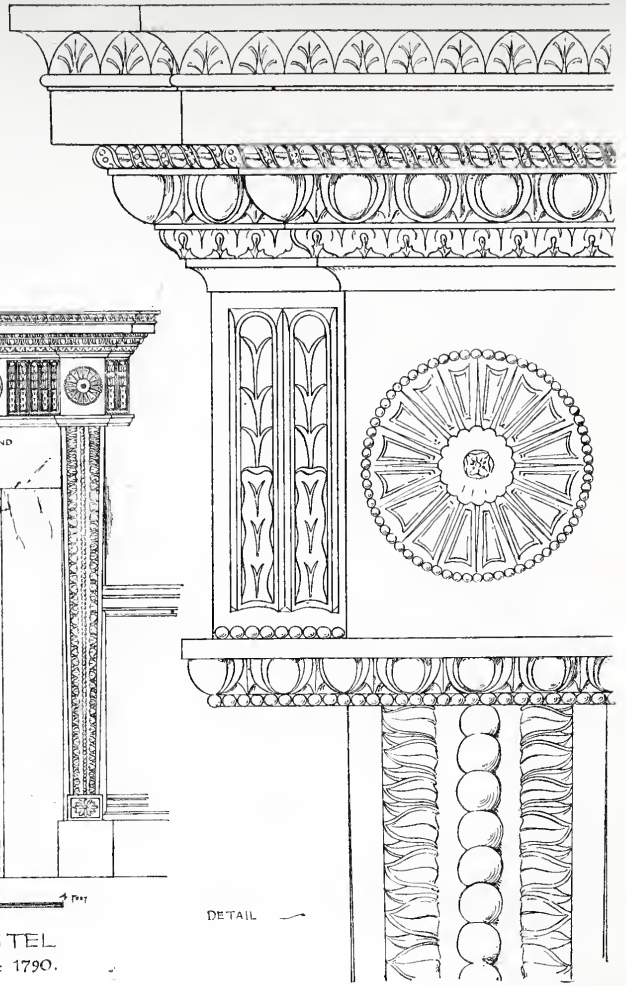


CHIMNEYPIECE FROM QUEEN'S HOUSE, GREENWICH.

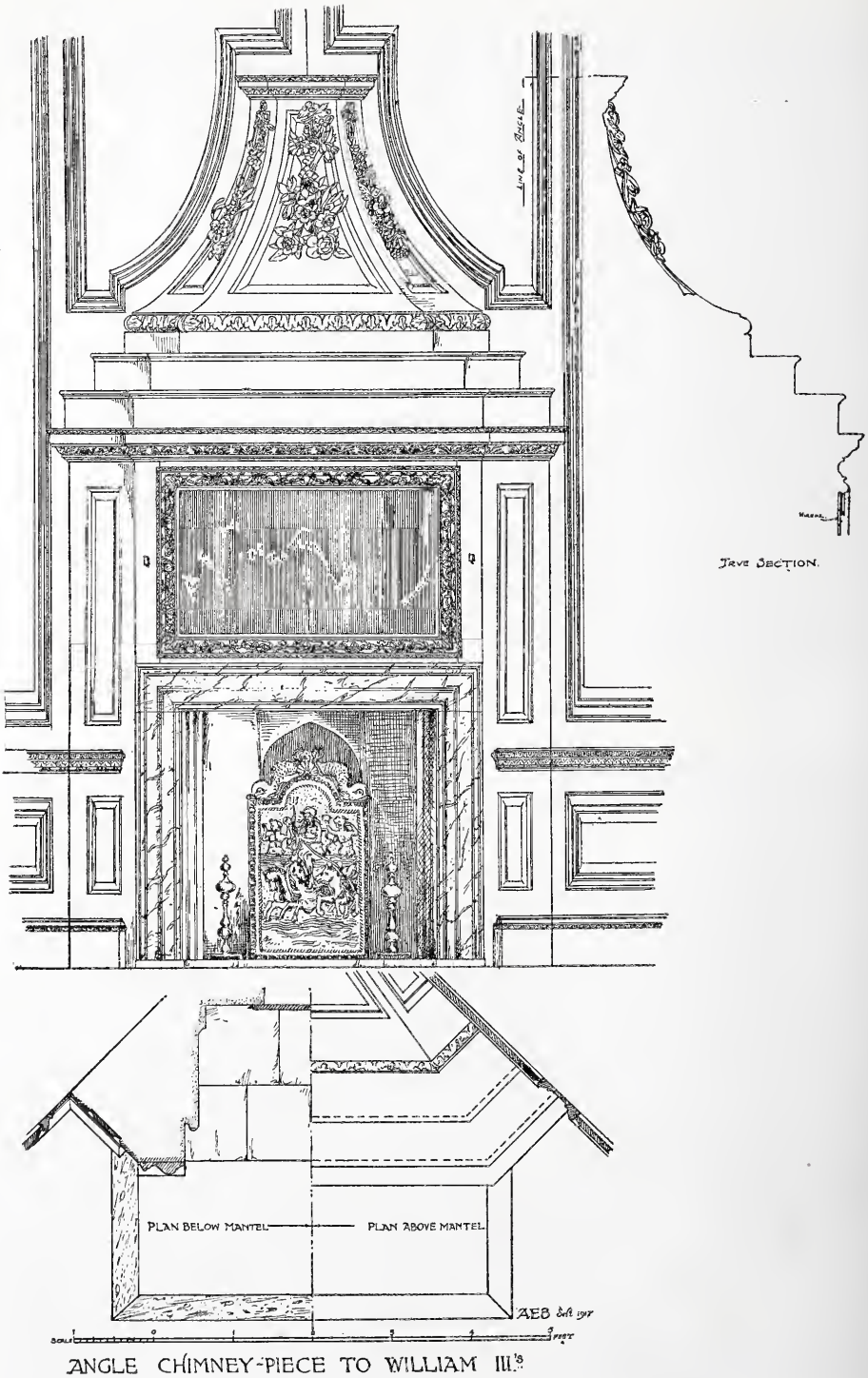
FORDE ABBEY.



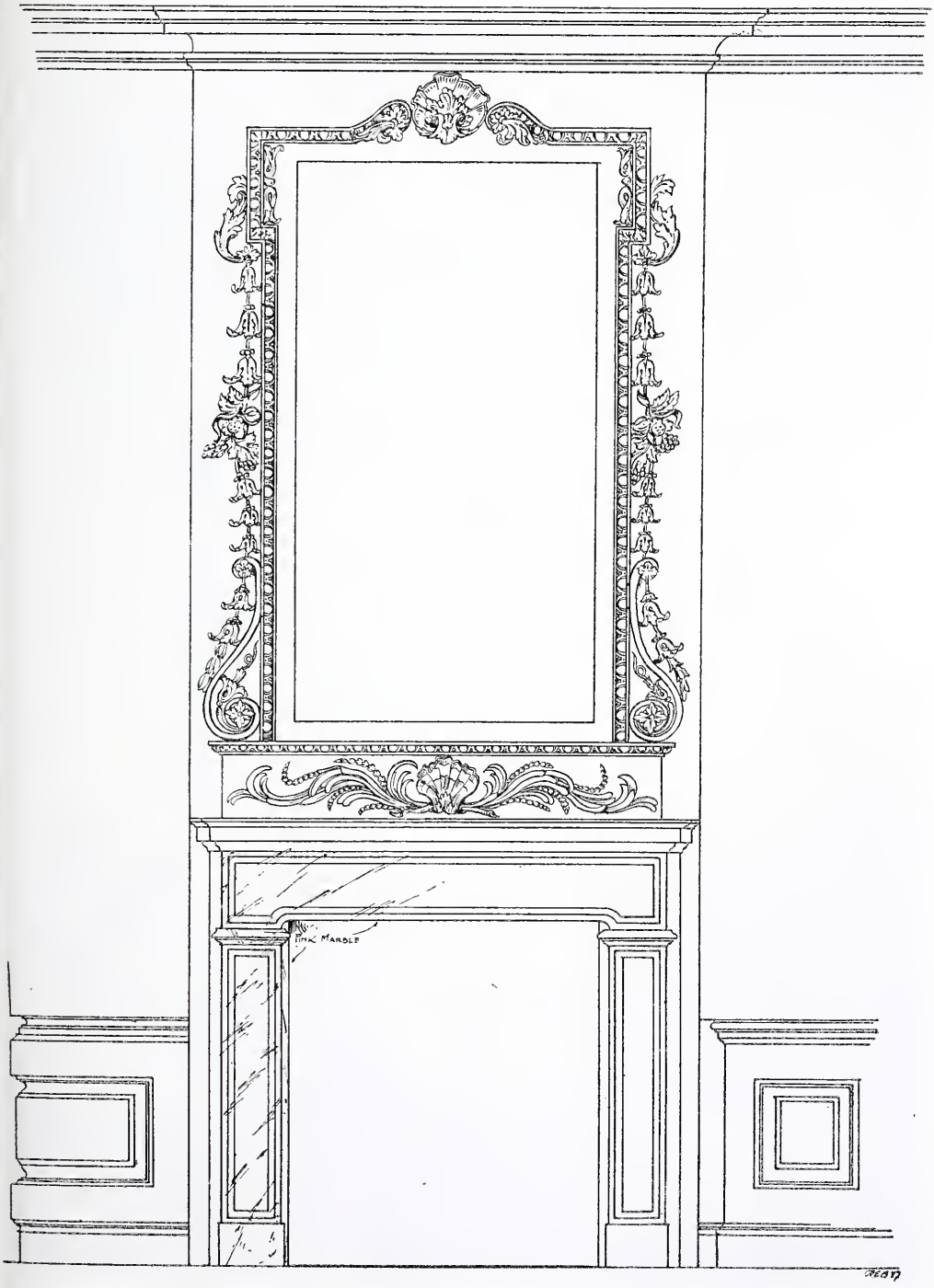
ELEVATION of ADAM PERIOD MANTEL
IN SMALL DRAWING ROOM c 1790.



DETAIL



ANGLE CHIMNEY-PIECE TO WILLIAM III.'S
ANTE ROOM HAMPTON COURT PALACE.



GVEST CHAMBER : MANOR OF CHRISTCHVRCH IPSWICH.

SCALE. 1 0 1 2 3 4 5 6 feet



STUDIO APARTMENT AT 200 WEST
FIFTY-SEVENTH ST., NEW YORK.



ARCHITECTURE *and* DEMOCRACY



Before, During and After the War

By CLAUDE BRAGDON, F.A.I.A.

III AFTER THE WAR

When the old world is sterile
And the ages are effete,
He will from wrecks and sediment
The fairer world complete.
"The World-Soul"—Emerson.

HE whom the World-Soul "forbids to despair" cannot but hope; and he who hopes tries ever to imagine that "fairer world" yearning at birth beyond this interval of blood and tears. Prophecy, to all but the anointed, is dangerous and uncertain; but even so, the author cannot forbear attempting some prevision of the architecture likely to arise from the wrecks and sediment left by the war.

As a basis for this forecast it is necessary, first of all, briefly to analyze the expression of the building impulse from what may be called the psychological point of view.

Broadly speaking, there are not five orders of architecture—nor fifty—but only two: *Arranged* and *Organic*. These correspond to the two terms of that "inevitable duality" which bisects life. Talent and genius, reason and intuition, bromide and sulphite are some of the names we know them by.

Arranged architecture is reasoned and artificial; produced by talent, governed by taste. Organic architecture, on the other hand, is the product of some obscure inner necessity for self-expression which is sub-conscious. It is as though Nature herself, through some human organ of her activity, had addressed herself to the service of the sons and daughters of men.

Arranged architecture in its finest manifestations is the product of a pride, a knowledge, a competence, a confidence staggering to behold. It seems to say of the works of Nature, "I'll show you a trick worth two of that." For the subtlety of Nature's geometry, and for her infinite variety and unexpectedness, Arranged architecture substitutes a Euclidian system of straight lines and (for the most part) circular curves, assembled and arranged according to a definite logic of its own. It is created, but not creative; it is imagined, but not imaginative. Organic architecture is both creative and imaginative. It is non-Euclidian, in the sense that it is higher-dimensional—that is, it suggests extension in directions and into regions where the spirit finds itself at home, but of which the senses gives no report to the brain.

To make the whole thing clearer it may be said that Arranged and Organic architecture bear much the same relation to each other that a piano bears to a violin. A piano is an instrument that does not

give forth discords if one follows the rules. A violin requires absolutely an ear—an inner rectitude. It has a way of betraying the man of talent and glorifying the genius, becoming one with his body and his soul.

Of course it stands to reason that there is not always a hard and fast differentiation between these two orders of architecture, but there is one sure way by which each may be recognized and known. If the function appears to have created the form, and if everywhere the form follows the function, changing as that changes, the building is Organic; if, on the contrary, "the house confines the spirit," if the building presents not a face but however beautiful a mask, it is an example of Arranged architecture.

The Gothic cathedrals of the "Heart of Europe"—now the place of Armageddon—represent the most perfect and powerful incarnation of the Organic spirit in architecture. After the decadence of Medieval Feudalism—synchronous with that of Monasticism—the Arranged architecture of the Renaissance acquired the ascendant; this was coincident with the rise of Humanism, when life became increasingly secular. During the post-Renaissance, or Scientific period, of which the war probably marks the close, there has been a confusion of tongues; architecture has spoken only alien or dead languages, learned by rote.

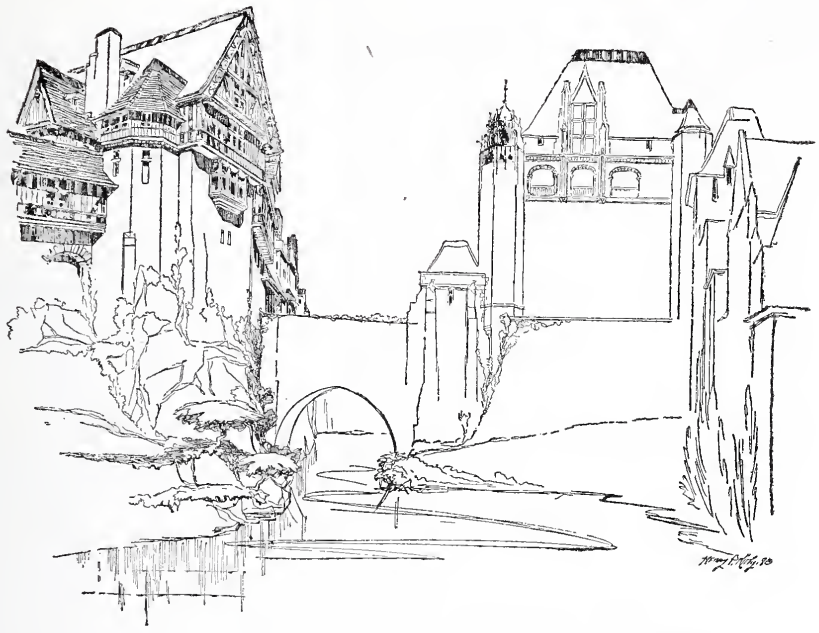
But in so far as it is anything at all, esthetically, our architecture is Arranged, so if only by the operation of the law of opposites, or alternation, we might reasonably expect the next manifestation to be Organic. There are other and better reasons, however, for such expectancy.

Organic architecture is ever a flower of the religious spirit. When the soul draws near to the surface of life, as it did in the two mystic centuries of the Middle Ages, it *organizes* life; and architecture, along with the other arts, becomes truly creative. The informing force comes not so much *from* man as *through* him. After the war that spirit of brotherhood, born in the camps (as Christ was born in a manger) and bred on the battlefields and in the trenches of Europe, is likely to take on all the attributes of a new religion of humanity, prompting men to such heroisms and renunciations, exciting in them such psychic sublimations, as have characterized the great religious renewals of times past.

If this happens, it is bound to write itself on space in an architecture beautiful and new; one which "takes its shape and sun-color" not from the niggardly mind, but from the opulent heart. This architecture will of necessity be organic; the product not of self-assertive personalities, but the work of the "Patient Daemon" organizing the nation into a spiritual democracy.

The author is aware that in this point of view there is little of the "scientific spirit"; but science fails to reckon with the soul. Science advances facing backward, so what can it pre-visage of a miraculous and divinely inspired future; or, for the matter of that, of any future at all? The old methods and categories will no longer answer; the orderly course of evolution has been violently interrupted by the earthquake of the war. Igneous action has superseded aqueous action. The casements of the human mind look out no longer upon familiar hills and valleys, but on a stark, strange devastated landscape, the plowed land of some future harvest of the years. It is the End of the Age, the *Kali Yuga*—the completion of a major cycle; but all cycles follow the same sequence: after winter—spring; after the Iron Age—the Golden.

The specific features of this organic, divinely inspired architecture of the Golden Age cannot, of course, be discerned by anyone, any more than the manner in which the Great Mystery will present itself anew to consciousness. The most imaginative artist can imagine only in terms of the already existent; he can speak only the language he has learned. If that language has been derived from medievalism, he will let his fancy soar after the manner of Henry Kirby, in his *Imaginative Sketches;* if on the contrary he has learned to think in terms of the Classic vernacular, Otto Rieth's *Architectur-Skizzen* will suggest the sort of thing that he is likely to produce. Both results will be as remote as possible from future reality, for the reason that they



ONE OF HENRY P. KIRBY'S IMAGINATIVE SKETCHES.

are so near to present reality. And yet some germs of the future must be enfolded even in the present moment; the course of wisdom is to seek them neither in the old romance nor in the new rationalism, but in the subtle and ever-changing spirit of the times.

The most modern note yet sounded in business, in diplomacy, in social life, is expressed by the phrase, "Live openly!" From every quarter, in regard to every manner of human activity, has come the cry, "Let in the light!" By a physical correspondence, not the result of coincidence but of the operation of an occult law, we have, in a very real sense, let in the light. In buildings of the latest type devoted to large uses there has been a general abandonment of that "cellular system" of many partitions which produced the pepper-box exterior, in favor of great rooms serving diverse functions lighted by vast areas of glass. Although an increase of efficiency has dictated and determined these changes, this breaking down of barriers between human beings and their common sharing of the light of day in fuller measure is a symbol of the growth of brotherhood, and the search, by the soul, for spiritual light.

Now if this fellowship and this quest gain volume and intensity, its physical symbols are bound to multiply and find ever more perfect forms of manifestation. So, both as a practical necessity and as a symbol the most pregnant and profound, we are likely to witness in architecture the development of the House of Light, particularly as human ingenuity has made this increasingly practicable.

Glass is a product still undergoing development, as are also those devices of metal for holding it in position and making the joints weathertight. The accident and fire hazard has been largely overcome by protecting the structural parts by the use of wire-glass and by other ingenious devices. The author has been informed on good authority that shortly before the outbreak of the war a glass had been invented abroad, and made commercially practicable, which shut out the heat rays, but admitted the light. The use of this glass would overcome the last difficulty—the equalization of temperatures; and might easily result in buildings of an entirely novel type, the approach to which is seen in the "pier and grille" style of exterior. This is being adopted not only for commercial build-

ings, but for others of widely different function, on account of its manifest advantages. Cass Gilbert's admirable studio apartment at 200 West Fifty-seventh Street, New York, is a building of this type.

In this seeking for sunlight in our cities we will come to live on the roofs more and more—in summer in the free air, in winter under variformed shelters of glass. This tendency is already manifesting itself in those newest hotels, whose roofs are gardens, convertible into skating ponds, with glazed belvideres for eating in all weathers. Nothing but ignorance and inanition stand in the way of the utilization of waste roof spaces. People have lived on the roofs in the past often enough, and will again.

By shouldering ever upward for air and light, we have too often made of the down town districts cliff-bound canyons—"granite deeps opening into granite deeps." This has been the result of no inherent necessity, but of that competitive greed whose Nemesis is ever to miss the very thing it seeks. By intelligent cooperation, backed by legislation, the roads and sidewalks might be made to share the sunlight with the roofs.

This could be achieved in two ways: by stepping back the façades in successive stages—giving top lighting, terraces, and wonderful incidental effects of light and shade; or by adjusting the height of the buildings to the width of their interspaces, making rows of tall buildings alternate with rows of low ones, with occasional fully isolated tower-like skyscrapers, giving variety to the skyline.

These and similar problems of city planning have been worked out theoretically with much minuteness of detail, and are known to every student of the science of cities; but very little of it all has been realized in a practical way—certainly not on this side of the water, where individual rights are held so sacred that a property owner may commit any kind of an architectural nuisance so long as he confines it to his own front yard. The strength of *is*, the weakness of *should be*, conflicting interests and legislative cowardice are responsible for the highly irrational manner in which our cities have grown great.

The search for spiritual light in the midst of materialism finds unconscious symbolization in a way other than this seeking of the sun. It is in the amazing development of artificial illumination. From a purely utilitarian standpoint there is almost nothing that cannot now be accomplished with light, short of making the ether itself luminiferous. The esthetic development of this field, however, can be said scarcely to have begun. The so recent San Francisco Exposition witnessed the first successful effort of any importance to enhance the effect of architecture by artificial illumination, and to use colored light with a view to its purely pictorial value. Though certain buildings have since been illuminated with excellent effect, it remains true that the corset, chewing-gum, beer and automobile sky signs of our Great White Ways are an index of the height to which our imagination has risen in utilizing this Promethean gift in any but necessary ways. Interior lighting, except negatively, has not been dealt with from the standpoint of beauty, but of efficiency; the engineer has preempted this field to the exclusion of the artist.

All this is the result of the atrophy of that faculty to worship and wonder which alone induces the mood from which the creation of beauty springs. Light we regard only as a convenience "to see things by," instead of as the power and glory that it inherently is. Its intense and potent vibrations and the rainbow glory of its color beat at the door of consciousness in vain. When we awaken to these things we shall organize light into a language of spontaneous emotion, just as from sound music was organized.

It is beside the purpose of this essay to attempt to trace the evolution of this new art form, made possible by modern invention, to indicate what phases it is likely to pass through on the way to what perfections, but that it is bound to add a new glory to architecture is sure. This will come about in two ways: directly, by giving color, quality, subtlety to outdoor and indoor lighting; and indirectly, by educating the eye to color values, as the ear has been educated to music; thus creating a need for more color everywhere.



ONE OF OTTO RIETH'S "ARCHITECTUR-SKIZZEN."

As light is the visible symbol of an inner radiance, so is color the sign manual of happiness, of joy. Our cities are so dun and drab in their outward aspects by reason of the weight of care that burdens us down. We decry the happy irresponsibility of the savage, and the patient contentment of the Oriental with his lot, but both are able to achieve marvels of color in their environment beyond the compass of civilized man. The glory of medieval cathedral windows is a still living confutation of the belief that in those far-off times the human heart was sad. Architecture is the index of the inner life of those who produced it, and whenever it is colorful that inner life contains an inner joy.

In the coming Golden Age life will be joyous; and if it is joyous, color will come into architecture again. Our psychological state alone even now prevents it, for we are rich in materials and methods to make such polychromy possible. In an article in a recent number of this magazine Mr. Leon V. Solon, writing from an entirely different point of view, divines this tendency, and expresses the opinion that color is again renascent. This tendency is so marked, and this opinion is so shared, that we may look with confidence toward a color evolution in architectural art.

The question of the character of what may be called the ornamental mode of the architecture of the New Age is of all questions the most obscure. Evolution along the lines of the already existent does not help us here, for we are utterly without any ornamental mode from which a new and better might conceivably evolve. Nothing so betrays the spiritual bankruptcy of the end of the Iron Age as this.

The only light on this problem which we shall find dwells in the realm of metaphysics rather than in the world of material reality. Ornament, more than any other element of architecture, is deeply psychological; it is an externalization of an inner life. So true is this that any time-worn fragment out of the past when art was a language, can usually be assigned to its place and its period, so eloquent is it of a particular people and a particular time. Could we therefore detect and understand the obscure movement of consciousness in the modern world, it might give some clue to the language it would later find.

It is clear that consciousness is moving away from its absorption in materiality, because it is losing faith in materialism. Clairvoyance, psychicism, the recrudescence of mysticism, of occultism—these signs of the times are straws which show which way the wind now sets, and indicates that the modern mind is beginning to find itself at home in what is called *the fourth dimension*. The phrase is used here in a different sense from that in which the mathematician uses it, but oddly enough four-dimensional geometry provides the symbols by which some of these occult and mystical ideas may be realized by the rational mind. One of the most engaging and inspiring of these ideas is that the personal self is a *projection* on the plane of materiality of a metaphysical self, or soul, to which the personal self is related as is the shadow of an object to the object itself. Now this coincides remarkably with the idea, implicit in all higher-space speculation, that the figures of solid geometry are projections on a space of three dimensions, of corresponding four dimensional forms.

All ornament is in its last analysis geometrical—sometimes directly so, as in the system developed by the Moors. Will the psychology of the new dispensation find expression through some adaptation of four-dimensional geometry? The idea is far from absurd, by reason of the decorative quality inherent in many of the regular hypersolids of four-dimensional space when projected upon solid and plane space.

If this suggestion seems too fanciful, there is still recourse to the law of analogy in finding the thing we seek. Every fresh religious impulse has always developed a symbology through which its truths are expressed and handed down. These symbols, woven into the very texture of the life of the people, are embodied by them in their ornamental mode. The sculpture of a Greek temple is a picture-book of Greek religion; the ornamentation of a Gothic cathedral is a veritable bible of the Christian faith. Almost all of the most beautiful and enduring ornaments have first been sacred symbols: the swastika, the "Eye of Buddha," the "Shield of David," the wheel, the lotus and the cross.

Now that "twilight of the world" following the war perhaps will witness an *Avatara*—the coming of a World-Teacher who will rebuild, on the one broad and ancient foundation, that Temple of Truth which the folly and ignorance of man is ever tearing down. A material counterpart of that temple will in that case afterward rise. Thus will be born the architecture of the future; and the ornament of that architecture will tell, in a new set of symbols, the story of the rejuvenation of the world.

In this previsioning of architecture after the war the author must not be understood to mean that these things will be realized *directly* after. Architecture, from its very nature, is the most sluggish of all the arts to respond to the natural magic of the quick-moving mind—it is Caliban, not Ariel. Following the war the nation will be for a time depleted of man-power, burdened with debt, prostrate, exhausted. But in this time of reckoning will come reflection, penitence.

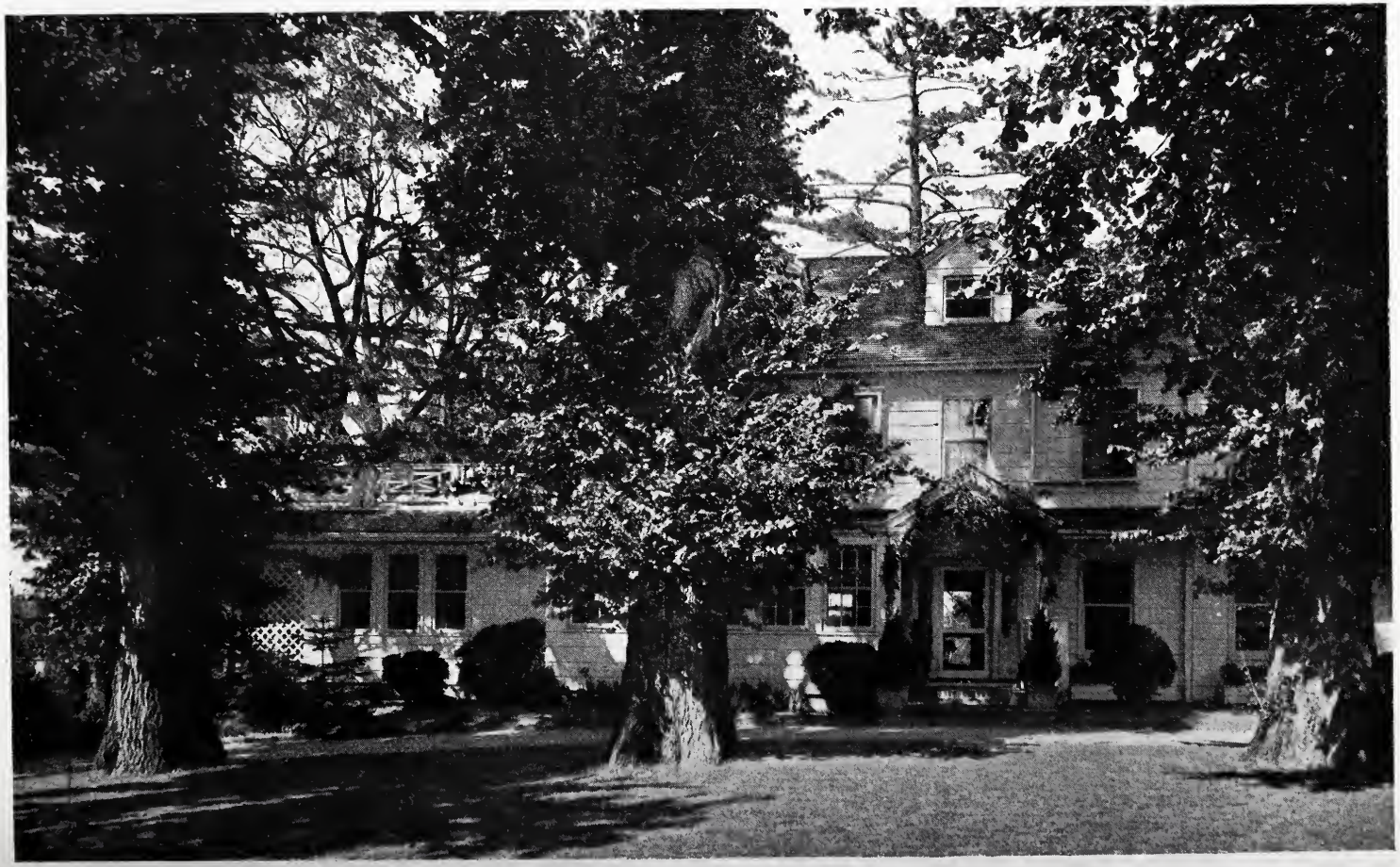
> "And I'll be wise hereafter,
> And seek for grace. What a thrice-double ass
> Was I, to take this drunkard for a god,
> And worship this dull fool."

With some such epilogue the curtain will descend on the great drama now approaching a close. It will be for the younger generations, the reincarnate souls of those who fell in battle, to inaugurate the work of giving expression, in deathless forms of art, to the vision of that "fairer world" glimpsed now only as by lightning, in a dream.

PORTFOLIO OF CVRRENT ARCHITECTVRE



ENTRANCE—RESIDENCE OF MR. FRANK BAILEY, LOCUST VALLEY, L. I. H. CRAIG SEVERANCE, ARCHITECT.



RESIDENCE OF MR. FRANK BAILEY, LOCUST VALLEY, L. I. H. CRAIG SEVERANCE, ARCHITECT.



DINING ROOM—RESIDENCE OF MR. FRANK BAILEY
LOCUST VALLEY, L. I. H. CRAIG SEVERANCE, ARCHITECT.



RESIDENCE OF MR. FRANK BAILEY, LOCUST VALLEY, L. I. H. CRAIG SEVERANCE, ARCHITECT.



RESIDENCE OF MRS. R. L. STEVENS, BERNARDSVILLE, N. J. LORD & HEWLETT, ARCHITECTS.



RESIDENCE OF MRS. R. L. STEVENS, BERNARDSVILLE, N. J. LORD & HEWLETT, ARCHITECTS.



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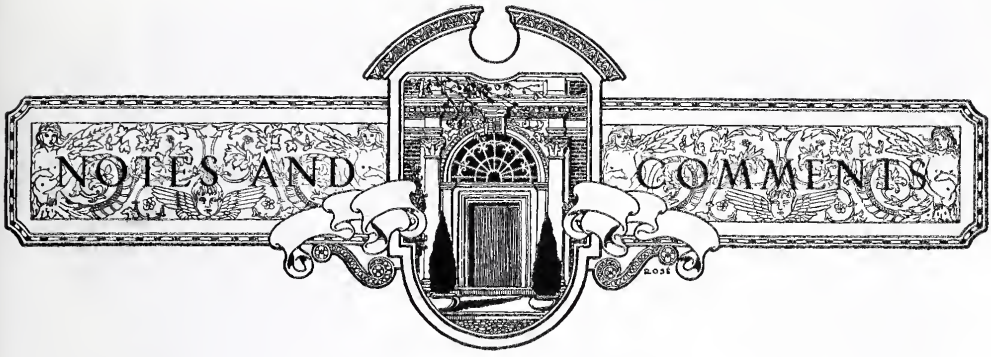
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The Liberty Field Hospital Ward.

In connection with recent efforts of many large organizations voluntarily to utilize their staffs and equipment for purposes aiding the prosecution of the war, attention should be called at this time to the Liberty Field Hospital Ward, designed for the American Museum of Natural History by its president, Mr. Henry Fairfield Osborn, assisted by Mr. Harry F. Beers, Superintendent of Construction of the Museum. An illustrated pamphlet of the building has been issued by the Museum of Natural History, lucidly presenting plans, elevations, sections and details, with photographs of the scale model, which may be seen at the Museum in West Seventy-seventh street, where inquiries may be addressed to the Director.

Many features exhibited by the design render it noteworthy among the numerous arrangements of hospital buildings developed by the war in Europe, and those responsible for its design have incorporated into it certain of the best points found in the latest and most improved field hospitals in use by the French, English, Canadian and American military forces.

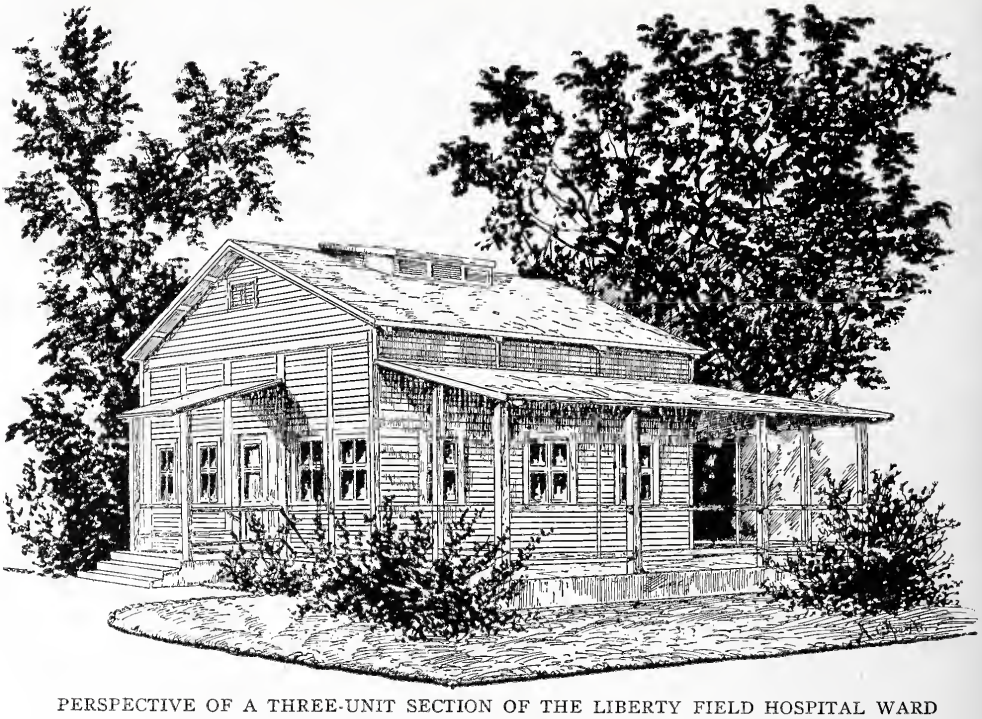
One of the dominant ideas in the Liberty Field Hospital Ward is to facilitate the ready exposure to the open air of any or all of its occupants, looking toward a greatly increased rapidity in their recovery—the beneficial effect of such treatment having been notably demonstrated when employed at the First Eastern General Hospital, Cambridge, England.

A second and equally important idea is the construction of the ward in units of five-foot lengths, each complete in itself, with the result that the units are portable and may be quickly erected; that the building is elastic and may be built to any length desired; and last, but not least, that these units may at the close of the war be used for purposes of reconstruction in the devastated portions of the battle areas of France and Belgium. To many this last fact will appeal as of great interest, serving as an antidote for a small part of the economic waste exhibited by the utter destruction of material created to fill a temporary need. These units may be assembled into dwellings of a size adapted to individual families, and at very slight expense be rendered permanent homes for repatriated Frenchmen.

The construction is extremely simple, and with few exceptions all parts of the building are fabricated, numbered, packed and shipped ready to be set up by the hands of unskilled labor. The main sills and floor beams of the building rest upon concrete piers one foot square. Posts of sufficient strength mark each five-foot division and carry the weight of the light steel trusses.

The panels, fitted between the posts, are identical and may be pushed out onto the sliding track which runs the length of the building, and slid back one over the other in such a way that two whole bays may be opened at the same time at intervals of their length; or, if desired, the panels may all be pushed to the end of the building and stored back to face. In this way both sides of the building may be completely open to the air. The windows in these panels, since they are similarly placed, correspond when one panel is pushed back over another and no obstruction is offered to the passage of light.

In the Overseas Hospital Ward in use by the United States Government a number of bays of the side walls are so hinged as to swing outward, forming ramps to the ground. This arrangement is desirable in case of fire or other emergency when it



PERSPECTIVE OF A THREE-UNIT SECTION OF THE LIBERTY FIELD HOSPITAL WARD CONVERTED INTO A DWELLING AFTER THE WAR.

is necessary to evacuate the hospital quickly, and such a suggestion might well be incorporated into the projected Liberty Field Hospital Ward where no such provision appears.

The construction of the panels themselves is of comparative permanence. The small air space, covered on both sides with tar paper, over which are applied the exterior and interior wall finishes, provides sufficient insulation against extremes of temperature. Above the sliding panels are stationary panels of like construction fitted between the posts. The floor panels are made up in much the same manner to protect against dampness, heat and cold. The interior partitions are of pine construction, covered with compo-board.

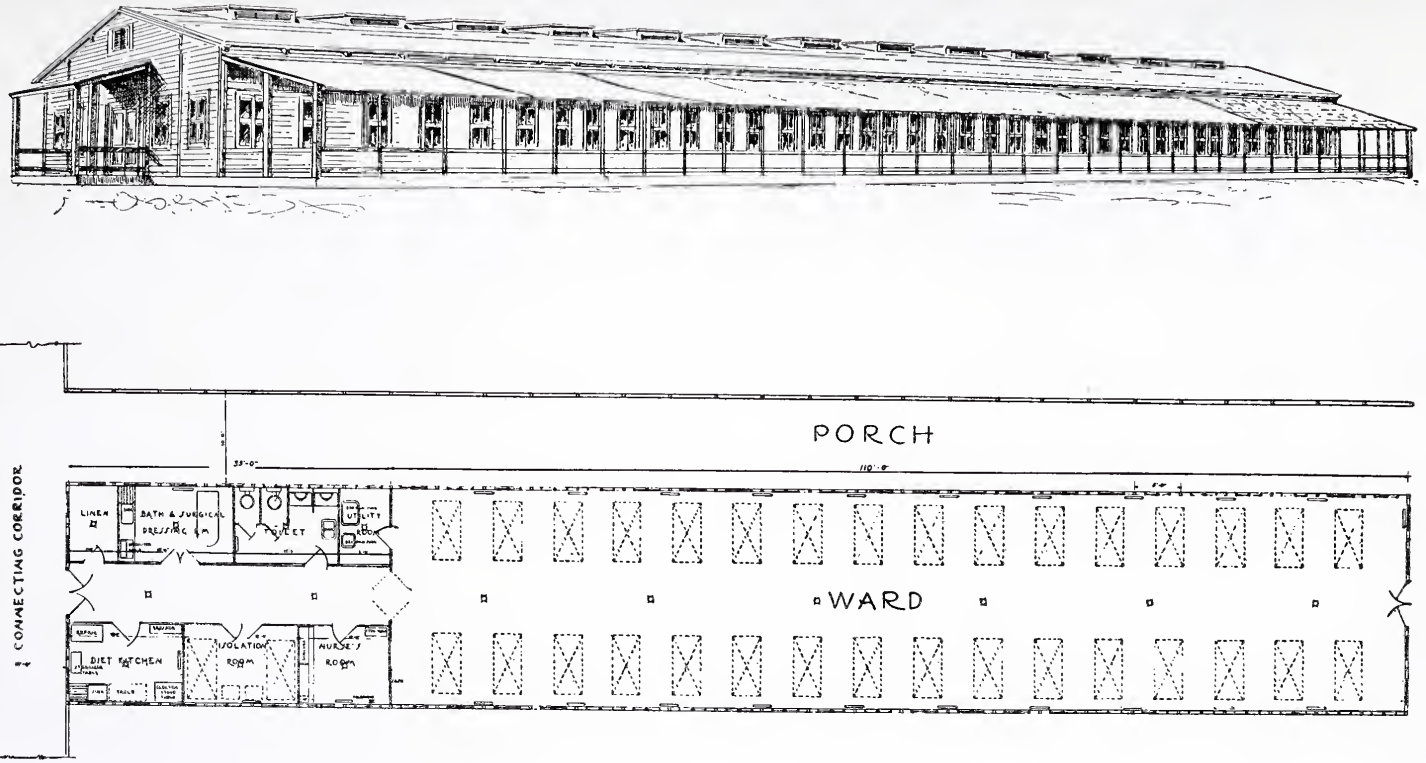
The floors of the porch and ward are at the same level, permitting the comfortable moving of patients from one to the other.

The height of the interior from floor to hung ceiling is 11 feet 6 inches, with an air space above to the ridge of the roof six feet at its centre. Ventilating devices in the ceiling are manipulated from within by hooks and communicate with louvered openings above the roof. This ceiling treatment would seem to be an improvement upon that of the Overseas Ward, in that the generous air space with end-to-end ventilation offers more protection against the summer heat than does the open roof of the Overseas Ward, while the double ventilators give greater protection from outside dust.

A ten-foot porch, running along the whole length of one side and across the end of the building, is covered by a canvas awning which may be rolled back in sections on the supporting rafters.

The roof truss is ingeniously arranged in three parts: the steel portion, which, economically designed in its tension and compression members, may be folded for shipment like a great jack-knife; and the two wooden rafters, which are bolted to the steel when assembled and are notched to fit properly to the top of the side walls of its centre.

The recommended size for the ward is one hundred and fifty feet by eleven feet six inches; floor to peak to roof, seventeen feet six inches. In the ward may be accommodated thirty-two beds, with an additional two in the isolation room, and one-half of this number of beds may be



PERSPECTIVE AND FLOOR PLAN—LIBERTY FIELD HOSPITAL WARD OF UNIT CONSTRUCTION, PORTABLE AND CONVERTIBLE INTO DWELLINGS.

placed on the open porch at one time. In the service portion, occupying one end of the building, are a diet kitchen, isolation room, nurses' room, utility room, toilet and lavatory, bath and surgical dressing room and linen room.

An important consideration in such work is the weight and transportation. The statistics with the layout give the total weight of the completed ward (150 feet in length) as 114,425 lbs. (cubage 4,484), and state that one such ward can be transported to the destination in seventeen standard United States Liberty trucks, while it is believed that a more economical method might be possible in dealing with the material in gross. The estimated cost of thirty Liberty Field Hospital Wards, with space for 1,020 beds, prices for labor and material prevailing April 10, 1918, ranges from $231,000 to $292,000 complete, or about $8,000 per ward.

The contribution of so much thought and labor on the part of the designers is significant of the unselfish aid which is being offered to the Government in its tremendous work of preparing for a vigorous and successful carrying on of the war, and it is to be hoped that prompt use will be made of the suggestions contained in the design, if such has not already been the case. To the advantages of unit construction and the fact that the units may be used so successfully for dwellings after the war are added its adaptability for use as Army Red Cross hospitals, field buildings or convalescent wards, and for Y. M. C. A. canteen work under both winter and summer climatic conditions.

CHARLES OVER CORNELIUS.

The Country House Number October 191
ARCHITECTVRAL RECORD



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THE ARCHITECTVRAL RECORD

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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY
THE ARCHITECTURAL RECORD COMPANY
115-119 WEST FORTIETH STREET, NEW YORK
F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.



DETAIL OF GARDEN FRONT—HOUSE OF TIMOTHY CROWLEY, GREENWICH, CONN. JAMES C. GREEN, ARCHITECT.

THE ARCHITECTVRAL RECORD

VOLVME XLIV



NVMBER IV

OCTOBER, 1918

The AMERICAN COUNTRY HOUSE

With Particular Reference to Types Developed or Improved During the War

BY

A. D. F. HAMLIN

HAVING been honored once more with the request that I would prepare the Country House Number of the Architectural Record, I have chosen as the dominant, though not exclusive, subject of interest the small house. Under present conditions it was inevitable that some, at least, of the work being done by or under the Government and by large manufacturing corporations to provide small houses for their working people, should find notice, comment and illustration, as an important part of this general subject.

It is not my purpose, however, to discuss the larger aspects of Governmental, industrial and community housing. These are being discussed and illustrated with fullness and adequacy in the Architectural Record and in other periodicals, particularly the "Journal of the American Institute of Architects," which deserves the highest praise for its insistence on the broadest outlook, the most far-seeing plans and the most fully-tested methods for the solution of the colossal problems with which we have been so suddenly faced. My purpose has been rather to present the problem of the individual house, and to show how it has been or is being solved by a few (by no means all) of the architects engaged in the great work. Not all the material desired has come to hand, and I particularly regret my inability to present photographs of the interiors of these houses for workers. While to the community as a whole, and to the public, it is the exterior aspect of these houses, their surroundings and the general layout of the new village or group of houses that counts, for the worker and his family the interior is even more important.

My reasons for giving the small house so important a place in this issue I have stated briefly in the article under that title. I have there suggested that our architects are in danger of too exclusive preoccupation with the problems and op-

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portunities of the more monumental and costly problems of the art. Theoretically we all recognize the fact that a truly great national art must be a democratic art, an art of the people. In theory, we deplore the woefully mistaken but almost universal notion that "art" is something outside of ordinary daily life; an accomplishment or luxury for the fortunate few; something external, to be bought or acquired like a commodity on the market; something inseparably associated with wealth and high education and splendor, in which the ordinary plain citizen can share only by the bounty of the munificent or by the municipality which collects the taxes of the multitude and with a small part of it buys for them—the masses—a certain amount of art in the shape of parks, buildings and museum collections. That "art" concerns the way we live at home, the kind of furniture and tableware we use, the atmosphere which we ourselves create in and about our homes, and that it is involved in the cheapest as well as the most costly appurtenances of life—this idea has not penetrated the consciousness nor affected the lives and happiness of the great multitude of the people of our land. We deplore this widespread misconception and its consequences, but what and how much are we doing to correct and remedy them? Some are active in this work, and it is in order to further their efforts that the house of small or moderate size and cost has been made to figure so largely in this issue of the Architectural Record.

Doubtless the influence of beautiful buildings of great cost is most salutary. There can be no question that the notable advance of taste among the wealthy is a benefit to the whole community. Nor can it be doubted that our splendid museums of art in a hundred cities of the land are a powerful educational influence for raising the level of the general public taste. More and more our schools, colleges and voluntary associations are concerning themselves with the dissemination of sound conceptions of the fine arts and with the problem of interesting an indifferent public in art as a universal concern. And it is certainly true that the average quality of even the American small house has been materially improved in the last twenty years. But there is much to be done in this direction before the average rural dweller becomes so habituated to the charm of artistic proportions and simple straightforwardness of artistic design that an ugly house is intolerable to his taste; and this work to be done rests so largely as an obligation upon the architects of the country that I shall not apologize for devoting so large a part of this issue to these more modest problems of the profession and giving greatly reduced space to a few of the larger and more pretentious houses recently erected.

I desire to express my thanks to all those architects who have contributed plans and photographs for this issue of the Architectural Record, and to ask their indulgence if, in selecting some and omitting others of the illustrations sent, I seem to have failed to do them full justice. The architect's own choice and the editor's cannot, of course, always agree, since both architect and editor are but human.

I

The Charm of the Small House



IT is possible to consider the house as a box or a collection of boxes, in which human beings stow their bodies and their various activities during certain parts of the day and night. From a still more material point of view it may be considered as a combination of floors, walls and roof, designed to shut out the weather; or as a more or less scientific structure of certain materials assembled in such fashion as to defeat the force of gravitation. To many people a house is simply a place in which to sleep and eat one or more meals daily; while to others it is a device for making money.

If a house be no more than one or all of these things to a man, he is one to be most deeply pitied; he has missed many of the purest joys of life. For the real house is not its floors and walls and roof; its doors, windows and chimneys; its stone and brick and plaster and wood; its plan and its decoration. The real house is something of which these are but the outward, visible dress, the appanage and incidentals; the real house is the invisible soul, if we may so call it, contained in the material shell of its visible form. Like all immaterial verities underlying material things, it may take on a Protean variety of aspects: it may be a shrine, a temple, a castle, a bond, a present dream in absence; it may be an exclusive abode, shutting out the external world and all disturbing and confusing things; or again it may be widely inclusive, holding out, as it were, hospitable arms to gather into its embrace its many children, to welcome all the adepts of its special affections and possessors of the password of its particular friendship.

All this—the reality of the visible house—is quite independent of the size, cost, location, material and form of the structure which encloses it. It is something greater and broader even than the idea of home, which of all familiar conceptions comes nearest to the wealth of meaning of the house and constitutes its richest and most precious element; but the house includes the home and enshrines it. Doubtless the home-idea is the inner and animating core of the house-idea; but not the whole of it. For one can conceive of the house that does not contain a home; but hardly of a home that is not enclosed in a house. Even the seaman's "home on the rolling deep" is bounded by the steel or wooden (or concrete) walls and decks of his ship, which constitute his house for the time being as well as his home. But the true idea of home gains full significance and realization only with the permanence of settled habitation in a house. It is the impermanence, the constant shifting and change of habitation inseparable from apartment-house existence in large cities, that makes the home-idea so weak in the flat. The flat-dweller does not speak of his "house" or his "home," unless it be in very exceptional cases, for to him the "flat" is neither. Its very name suggests only two dimensions in horizontal extension—and those two usually minuscule dimensions! The suppression of verticality in the housekeeping by the elimination of stairs is the chief, and almost the only, merit of this form of domicile, hence the appropriateness of the name of "flat"; how suggestive, too, of its squeezing out from the flat-dweller's life of a large part of the variety and spice of life in one's own house! And how often we hear of the mental and moral revolt that comes in later life against the poverty and flatness of this existence, even when passed in those tenements which, calling themselves "first-class apartments," exact twice or thrice the rental of a first-class house, and under



FIG. 1. COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y.
Myron S. Teller, Architect.

the guise of house service, rendered as an equivalent for exorbitant rentals, subject their inmates to the inescapable tyranny of janitors and uniformed flunkies, with hands incessantly held out for tips!

Is it not curious, by the way, to note that—in New York at least—the poor and middle-class (or shall we say "middle-wealth"?) families are driven from houses into flats by economic pressure, and the very wealthy by social pressure combined with the mercantile invasion of residence districts? Wearying of the burden of social exactions and of the administrative care of great houses, the wealthy house-dweller sells the house and moves into a $20,000 Park Avenue apartment. The bank clerk or college professor gives up his house and occupies a flat, because he cannot afford longer to "run" even the most modest house, which, in the city, requires several servants to do what can be accomplished in a flat with one; or, as an alternative, a constant and wearing running up and down of many stairs. But in time both the millionaire and the hard-working wage-earner feel the loss of those rich elements of home-life which can be cultivated only in the house. The rich man takes refuge from the city flat-life by occupying for the summer or for half the year his villa or summer "cottage"-palace at Lenox or on Long Island or on the Maine coast; he must salt the flatness of existence in the city with the savor of a few weeks or months of independence in his own house. The wage-earner who has no such refuge in his possession, and inadequate leisure to enjoy one if he had it, dreams of a happy day to come when he can retire from the dull routine of the office and flat, and in a modest cottage in New Jersey or in Westchester County, or perhaps in the New England or Middle West village from which he came, can cultivate his own little garden, swing his hammock on his own piazza, smoke his pipe by his own open fire, and gather about him under his own roof from time to time his scattered family and his special cronies and friends. It is a beautiful



FIG. 2. SOUTH VIEW OF GARDEN PORCH AND LIVING ROOM WINDOW—COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y.
Myron S. Teller, Architect.

dream, not always realized; sometimes realized in part, sometimes in its full delightsomeness. But while it is dreamed, what an inspiration and stimulus it supplies to earnest labor! What a goal it sets before the laborer, to give value and significance to every hour of toil! What a reward it offers for present frugality and careful saving!

II.

The great house has its fascinations: space, elegance, beautiful vistas, the elaboration of every refinement of luxurious comfort. In it the wealthy can surround themselves with the chosen environment, with pictures and bric-a-brac, rare carved furniture from ancient European palaces, trophies of sport, books in costly bindings, and create their own landscape about them by the skill of the landscape artist and the expenditure of great sums of money. They can shut out from sight every unpleasant or vulgar object, and forget the toiling, dirty-handed, working world outside, from whose honest labor so much of their luxury is drawn, and cultivate without disturbance whatever field of culture most attracts them.

But the great house has its price. One cannot live in luxury without a retinue of servants; and in a certain sense one is always the slave of those who serve him. A great house is a great care as well as a source of huge expense: how often are men driven to bankruptcy by the very scale of the unforeseen, ever-increasing budget of their great establishments? The great house means large and costly entertainments and a large and widely inclusive hospitality; a hospitality often conventional, based on a rigid debit and credit account of invitations given, received and returned. It is the splendid antithesis of the "simple life," the acme of polished, systematized and artificial existence; a huge investment with, too often, a miserably small return of unalloyed and rational pleasure. There are those, of course, for whom the great house is the splendid temple of the rites



FIG. 3. REAR VIEW FROM GARDEN—COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y.
Myron S. Teller, Architect.

of a beautiful, holy, rational family life, of a simple, hearty, restful hospitality; the merited reward of a life of earnest work, whose benefits have been shared with those who helped create them, or have been bestowed freely on the less fortunate, or have been made otherwise helpful to humanity, but how few are these honored exceptions!

The little house need entail none of these anxieties and burdens. It may be made just large enough for one's modest means, and yet compass within these modest limits all the most sacred joys of life. There is no confining the expansion of the spirit within the cubic contents of any room, however large or small. One may commune with the choicest minds of the ages in a seven-by-ten room—Dr. Eliot says that a five-foot shelf may suffice for this purpose. The most wholesome and lovely family life may flourish for years in six or seven rooms. The fairest flowers of friendship may be cultivated in a cottage. and a beautiful hospitality be dispensed in the commuter's house on a 25-foot lot in the suburbs. The man and wife who cultivate a tiny garden-plot of flowers in front of their house, and raise peas and corn in the lot behind, may extract from their modest eighth of an acre a keener joy and a richer satisfaction than the plutocrat from his Italian garden, his hothouses, prize orchids and army of gardeners. Truly, happiness is something that wells up from within, not something poured in from without; dependent not on the multitude and costliness of one's possessions, but on the spirit and its attitude towards life. The little house may enshrine it as well as the palace.

III.

To the artist, as an artist and not as a man earning his bread and butter by commissions on plans and superintendence, the little house offers problems as fascinating, and often as difficult, as any millionaire's palace.

It is true that one may draw plans and write specifications for a small house



FIG. 4. LIVING ROOM—COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y.
Myron S. Teller, Architect.

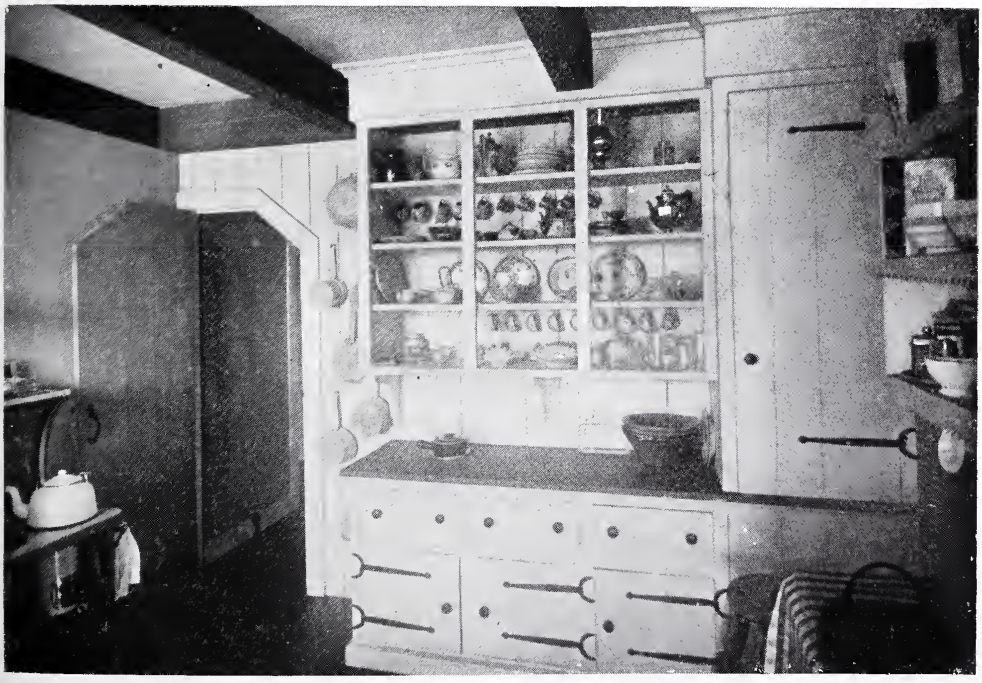


FIG. 5. KITCHEN—COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y.
Myron S. Teller, Architect.

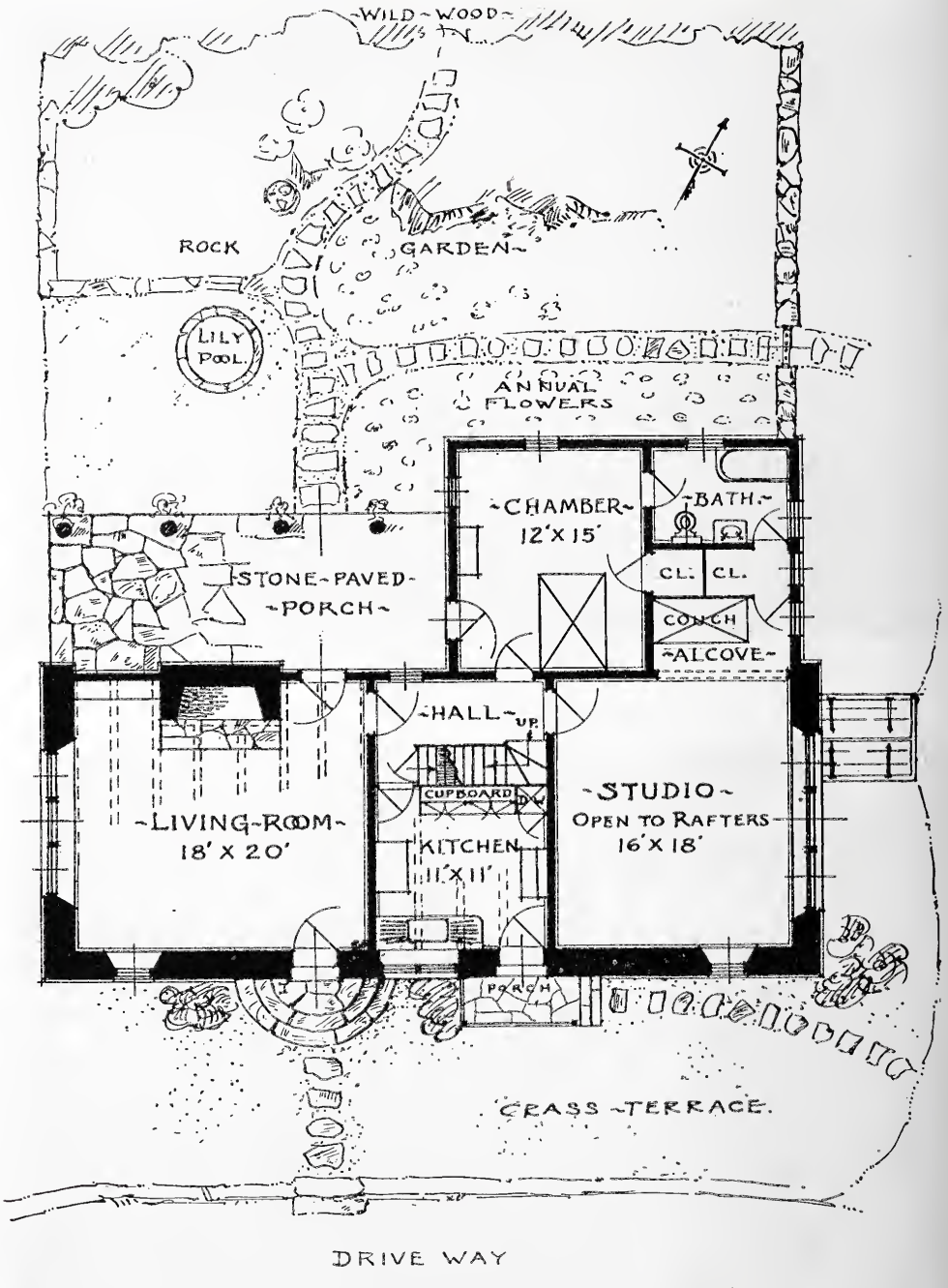


FIG. 6. FIRST FLOOR PLAN—COTTAGE OF MISS CAROLINE M. SPEARE, WOODSTOCK, ULSTER CO., N. Y. MYRON S. TELLER, ARCHITECT.

in short order and with but little thought. To put together six or seven rooms with the necessary hall, stairs and chimney-flues, so as to produce a habitable building, is within the powers of a tryo. But the little house with charm—that is another matter! The line that divides the artistic from the commonplace may be a tenuous line sometimes, but it is as real as the Arctic circle or the Equator, and there are many who have never been able to cross it. No formula will suffice to bridge the invisible gap between them. The imparting of charm cannot be taught in the class-room. The designer must have within him the instinct of the beautiful, a certain spark of inspiration which it is not extravagance to call divine. He must not merely possess a cultivated taste, that is, the quality of culture which enables him to discriminate instantly between the commonplace and the fine, the beautiful and the showy, the simple and the vulgar; he must be a creator, an originator of beauty, a distiller of the subtle aroma of charm from the alembic through which have passed all his impressions, learnings, acquisitions, dreams, contacts of and with the things of house-design. For some, this process of distillation is deliberate, even slow. They do not produce magically successful "first thoughts," but every house that issues from their plans has in it something unique, personal, delightful: it has charm. Others dream lovely dreams in waking hours and produce with happy audacity the material embodiments of these dreams. But whether deliberately or by seemingly instantaneous origination, the creator of charm in the small house is externalizing what already exists within him; there must be involution before evolution. This mysterious generation of inward visions of The House—visions which take Protean shapes in practice, and of which the architect is seldom conscious until he puts pencil to paper—takes us into a field of psychology and of the philosophy of esthetics in which I am not prepared to delve. Probably the most successful creator of charm in small houses would fail utterly to explain the process. He could not enumerate the elements of the artistic charm of his designs. That explains the futility of rules and formulæ for the production of charm.

Try it yourself. Pick out a dozen or a hundred photographs of small houses which appeal to you as charming—exteriors, interiors, details—houses from the country lanes of England, from French farmsteadings and villages, from New England by-ways; houses of stone, brick, half-timber, wood, stucco, tile and concrete; mingle with them the half-dozen best houses of your own design, and then tell us what is the secret bond that unites them all in one family, the elusive common element that underlies all their diversified appeal. Their beauty is as varied as their materials, sizes and shapes. Some are merely picturesque; some are quaint; some you call distinctly beautiful. Some are delightful to look at from without, nestling comfortably and harmoniously in their surroundings; others you feel you would like to live in. Walls of red brick and gray stucco and mottled stone, with shingles of slate and thatch and tile; high rooms and low rooms, beamed ceilings and ceilings of plaster; diamond panes and large panes; big fireplaces and little ones; houses with porches, with piazzas, with balconies, with bay-windows, and houses with none of these things—how long the catalogue of the elements of their design, and how subtle and evasive the laws by which these varied elements have been combined in each appealing whole! At best, one can name certain common qualities, but not any rule for producing them. Simplicity, harmony, fitness and sincerity are the cornerstone qualities, it seems to me, of their charm. Complexity and all appearance of labored picturesqueness must be absent from the small house. Its arrangements should reveal thought, but not painful thought.

The house of real charm appears natural, almost inevitable; it seems to say, "Of course!" This quality of inevitableness, of naturalness, of obvious fitness to its place and its purpose may be, indeed, the result of much study and experiment, at any rate of long experience; but the labored process of its production should never be in evidence. It is an old saying



FIG. 7. FRONT VIEW OF HOUSE ON AN ESTATE NEAR SALEM, N. C.
Willard C. Northrup, Architect.

that "the highest art is to conceal art." To make this saying true one should interpret it to mean that the highest art is that which conceals the labor that brought it forth. The most finished style is that which seems most natural and spontaneous. Yet though one laughs at the art teacher who enjoined his pupils to "try hard to be spontaneous," one must not forget that "involution precedes evolution," and that spontaneity of expression requires first of all abundance of material, the possession of something to say worth the saying; and that a long process of acquisition, often laborious, and of digestion and discrimination, must precede the expression of what has been acquired.

The small house with charm has individuality. It may belong to a type with numerous exemplars, but it differs in subtle ways from all its congeners. As one rambles through the fishing towns and coastal farm villages of Maine, one encounters frequent examples of a type of house, one story high, low-set, shingled, with a central door and two windows on either side—the simplest possible solution of the rural house problem—yet beautiful with a rustic simplicity, a harmony of line and proportion that charms one by an insidious and evasive appeal. No two of these are exactly alike—that is part of the secret. Each has been an individual and personal expression, conforming to a perfectly common and familiar type, but having proportions, details of moldings, of door-paneling and window-trim, variations of roof-pitch and window-spacing, that impart to the whole its own individual and special character. It is like the difference between hand-made and machine-made furniture. The common type is pleasing, because it is a product of the country and its conditions. How different from the upstart, mechanical, prosperously ugly houses of the rural semi-rich of the same villages, which reproduce designs from plan-books published in Chicago or New York or Omaha or elsewhere!

The upshot of these considerations that I have somewhat ramblingly set forth seems to me to be this: the problem of



FIG. 8. REAR VIEW OF HOUSE ON AN ESTATE NEAR SALEM, N. C.
Willard C. Northrup, Architect.

the small house is well worth the architect's while. It even deserves a large measure of self-sacrifice on his part. To a busy architect, with many large commissions on hand, the small house makes little appeal; some offices refuse to touch it. This has always seemed to me a mistake, as if a great doctor should refuse to see a poor patient or a great divine decline to minister to a poor parishioner. Perhaps the policy is, after all, one of kindness to the smaller offices; but the kindness would be greater if the big offices shared their large commissions with the smaller offices, and did some of the little-house work themselves!

For, after all, there are a thousand small houses built for every large house, and the beauty and charm of the country at large depend far more on the character of the small houses than of the large ones. We have too many towns of palaces and slums, and too many semi-rural communities growing up with "handsome" streets of costly houses, and unsightly purlieus of small houses varying from sordid ugliness to pretentious ugliness. A small house of charm is an object lesson to all who pass by. Doubtless the average small house of today is a better house than that of forty or even twenty years ago. It is better planned, better built, more convenient and livable; and even commercial syndicates have begun to cater to an improved taste in houses. But there is yet a great work to be done in this field, and our architects are the men and women who must do this work, a work both of creation and of education. We need to fight the American love of display, the national passion for big things which neglects or despises the little things. We must do what we can to eradicate the popular notion that Art (spelt with a capital A) means something costly for the few, something showy to be bought and applied from the outside, instead of something inherent, an essential part of our living and thinking and doing, a quality as necessary and natural in little things as in big things; something of the fireside and home, not the "daubing with cost" of which Bacon complained in the days of Queen Bess.



FIG. 9. FRONT VIEW—HOUSE OF C. L. CASEY, CAMBRIDGE, OHIO.
F. L. Packard, Architect.

The cheapest small house may, after all, be a true work of art, the product of an architect's unselfish and consecrated talent, full of the charm of simplicity, fitness, harmony and sincerity, a dwelling-place worthy of beautiful lives and high and homely virtues.

IV.

The number of small houses illustrated in this number of the "Record" is not large, if we except the examples of industrial and community housing which accompany the article on "The Workingman and His House." The fourteen houses shown in illustrations 1 to 32 inclusive are only typical, by no means exhaustive, of the variety of styles and forms of American houses generally. In these examples the variety of material is exceeded only by the variety of place and of style. The first one—the stone cottage and studio for Miss C. M. Speare at Woodstock, N. Y.—is partly of stone, partly of frame, and charmingly reminiscent of the Dutch Colonial farmhouses of Ulster county, where it is situated. Mr. Myron S. Teller (Kingston, N. Y.), the architect of this picturesque cottage, in a memorandum accompanying the views we publish, states that the whole interior has been carried out in the old Dutch fashion, with floors of wide planks nailed through their faces with hand-wrought nails; with studio ceiling-rafters of peeled poles instead of sawed lumber, and with hand-wrought iron hardware to doors and windows. Then follow six cottages of stucco-on-lath: of these the first is near Salem, N. C. (Fig. 7, 8); the second at Cambridge, O. (Fig. 9, 10), and both with their picturesque broad gables and low eaves show a distinctly American transformation of suggestions from Old World types. Following these are three charming California bungalow-cottages at Coronado (Fig. 11-15), reminiscent of "Mission" traditions; and the Fleming residence at Glencoe, Ill. (Fig. 16-19), whose lines are simplicity itself, and whose internal spaciousness of effect almost takes it out of the category of small houses. The next house, also at Glencoe (Fig. 20-23), with its gambrel roof, broad



FIG. 10. END VIEW—HOUSE OF C. L. CASEY, CAMBRIDGE, OHIO.
F. L. Packard, Architect.

shingles and interesting lines, suggests Maine or Eastern Massachusetts rather than Illinois. The keynote of its design is simplicity; this appears clearly in the view in Fig. 22, and in the dining room shown in Fig. 23. The Bissell residence at Birmingham, Ala. (Fig. 27-29), is, like the Fleming house at Glencoe, on the very outer edge of the category of "small" houses, and yet is certainly not a big house. With its broad eaves and gable and low-pitched roof, this house, externally of brick veneer and stucco, suggests Southern warmth and hospitality. The architect's notes accompanying the photographs state that its cost, complete with furnace, electric wiring and vacuum cleaner system, was $12,000, or 20 cents per cubic foot.

The three houses for P. W. Proctor at Sea Cliff, California, are suburban rather than strictly country houses; that is, they are built on restricted sites and on a more compact plan than we generally associate with country house design. The cool-looking and spacious living room, shown on page 297, has something of the formal lines of a city house. In the California climate an open fireplace generally denotes winter occupancy, and the minute coal grate contrasts strikingly with the spacious opening, for instance, of the Whitinsville fireplace on page 327.

The two-family house at Pinehurst, N. C. (Fig. 31), is a picturesque frame building of pleasing lines; its outside chimney is a typical North Carolina feature. The list closes with another small house by the same architects, this one in New England, a picturesque stuccoed bungalow at Uxbridge, Mass., with an interior which well expresses the idea of rustic simplicity combined with and contributing to the charm of the small house (Figs. 30, 32).



FIG. 11. FAÇADE OF CENTRAL COTTAGE OF GROUP AT CORONADO, CAL.
W. Templeton Johnston, Architect.



FIG. 12. CORNER VIEW OF TWO COTTAGES OF GROUP AT CORONADO, CAL.
W. Templeton Johnston, Architect.



FIG. 13. FRONT VIEW OF GROUP OF THREE COTTAGES AT CORONADO, CAL. W. TEMPLETON JOHNSTON, ARCHITECT.



FIG. 14. GARDEN SIDE OF A COTTAGE AT CORONADO, CAL.
W. Templeton Johnston, Architect.

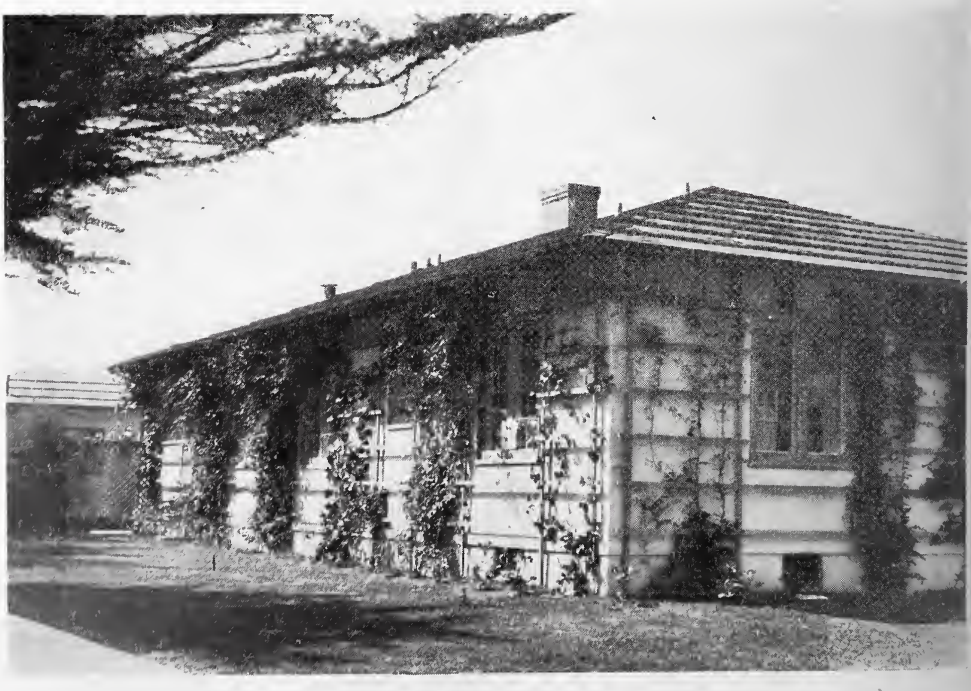


FIG. 15. GARDEN SIDE OF A COTTAGE AT CORONADO, CAL.
W. Templeton Johnston, Architect.



FIG. 16. HOUSE OF HERBERT FLEMING, GLENCOE, ILL. J. A. ARMSTRONG, ARCHITECT.



FIG. 17. LIVING ROOM—HOUSE OF HERBERT FLEMING, GLENCOE, ILL.
J. A. Armstrong, Architect.



FIG. 18. LIVING ROOM—HOUSE OF HERBERT FLEMING, GLENCOE, ILL.
J. A. Armstrong, Architect.

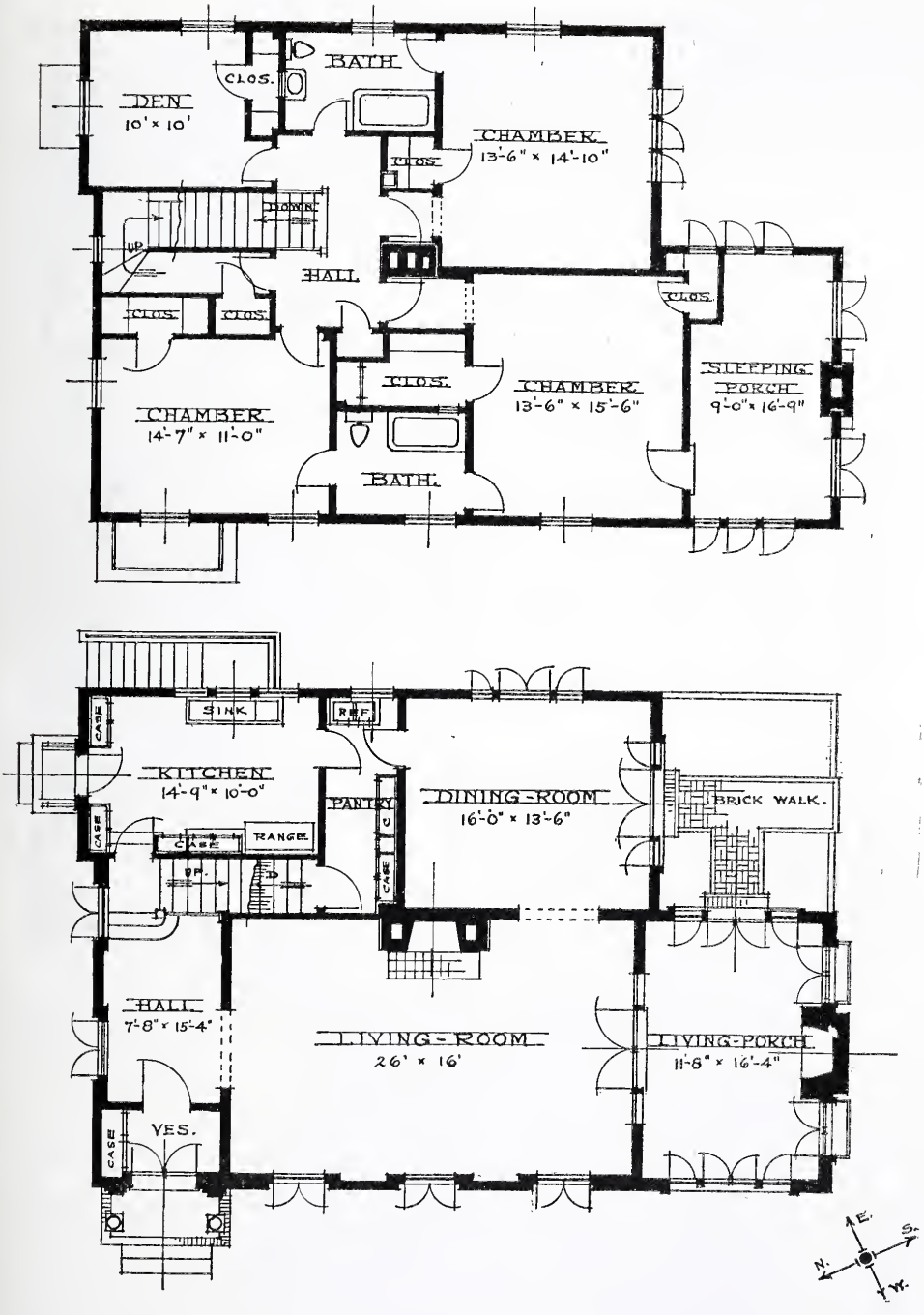


FIG. 19. FIRST AND SECOND FLOOR PLANS —HOUSE OF HERBERT FLEMING, GLENCOE, ILL. J. A. ARMSTRONG, ARCHITECT.

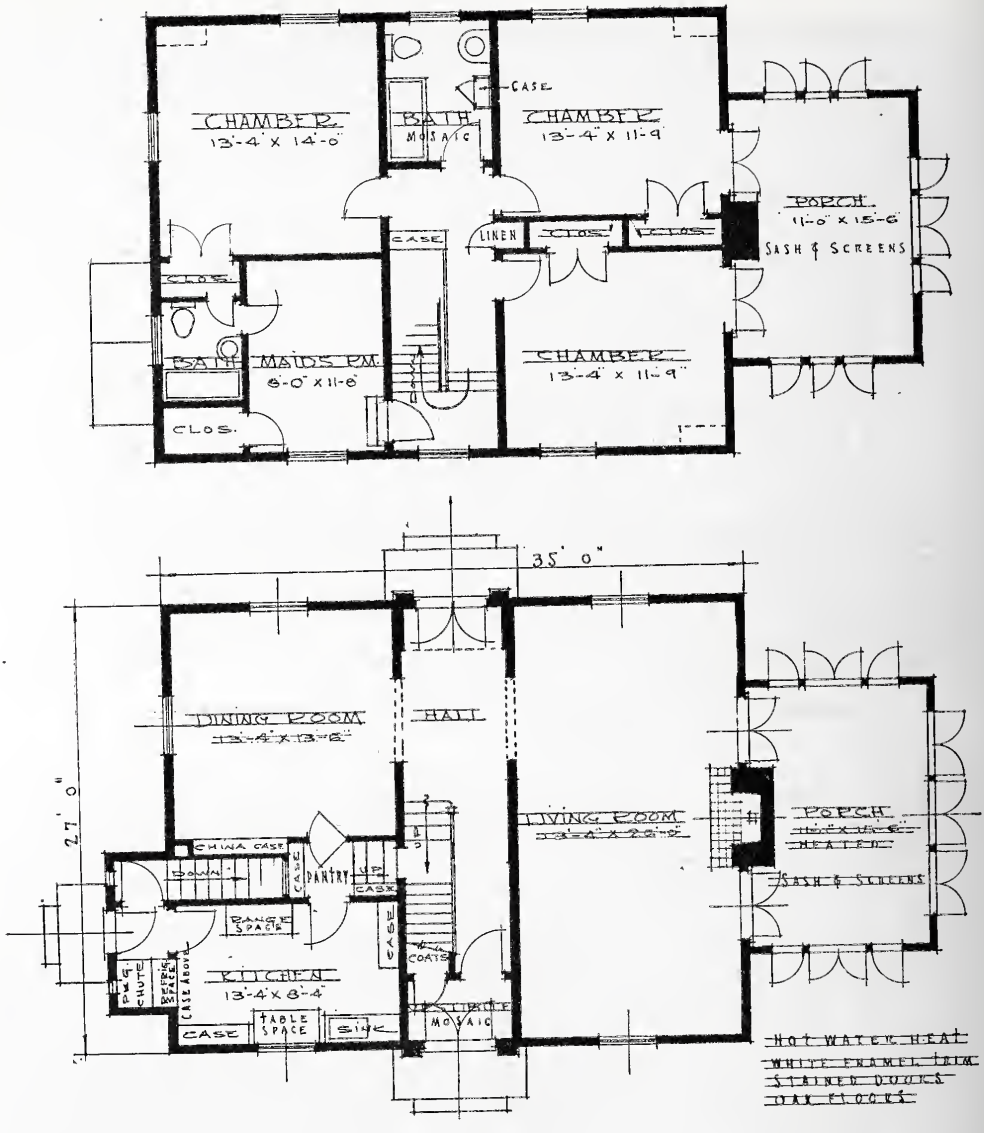


FIG. 20. FIRST AND SECOND FLOOR PLANS—HOUSE OF F. E. PAYNE, GLENCOE, ILL. J. A. ARMSTRONG, ARCHITECT.



FIG. 21. FRONT VIEW—HOUSE OF F. E. PAYNE, GLENCOE, ILL. J. A. ARMSTRONG, ARCHITECT.



FIG. 22. FRONT VIEW—HOUSE OF F. E. PAYNE, GLENCOE, ILL.
J. A. Armstrong, Architect.

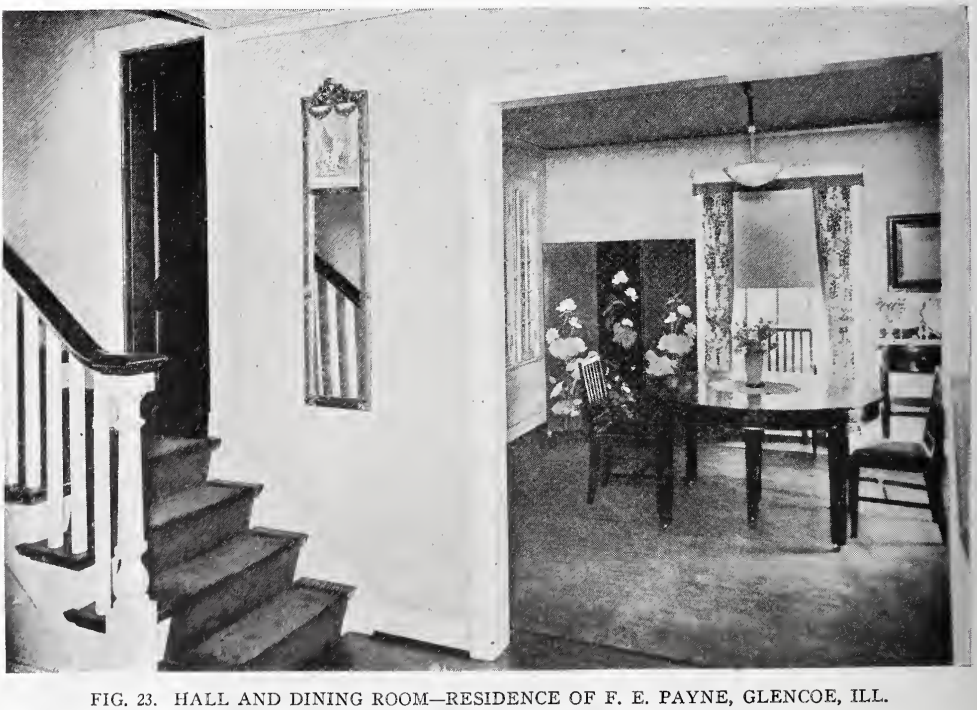


FIG. 23. HALL AND DINING ROOM—RESIDENCE OF F. E. PAYNE, GLENCOE, ILL.
J. A. Armstrong, Architect.



FIG. 24. THREE HOUSES FOR P. W. PROCTOR, SEA CLIFF, CAL.
Willis Polk, Architect.



FIG. 25. END OF MIDDLE HOUSE OF GROUP—HOUSES FOR P. W. PROCTOR, SEA CLIFF, CAL.
Willis Polk, Architect.



FIG. 26. BALCONY AND PORCH, MIDDLE HOUSE OF GROUP—HOUSES FOR P. W. PROCTOR, SEA CLIFF, CAL.
Willis Polk, Architect.

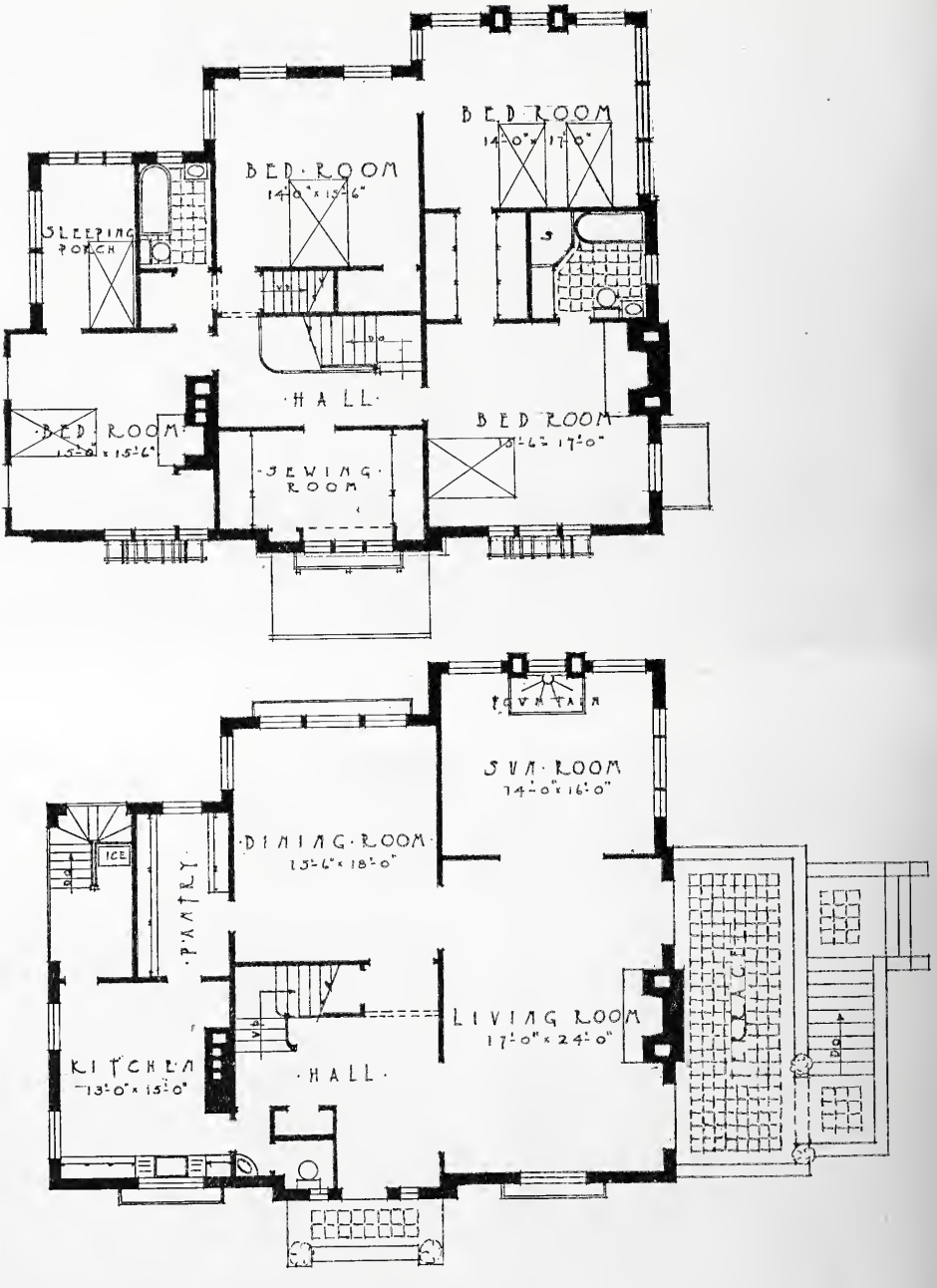


FIG. 27. FIRST AND SECOND FLOOR PLANS—HOUSE OF C. S. BISSELL, MILNER HEIGHTS, BIRMINGHAM, ALA. W. L. WELTON, ARCHITECT.



FIG. 28. HOUSE OF C. S. BISSELL, MILNER HEIGHTS, BIRMINGHAM, ALA.
W. L. Welton, Architect.



FIG. 29. END VIEW—HOUSE OF C. S. BISSELL, MILNER HEIGHTS, BIRMINGHAM, ALA.
W. L. Welton, Architect.



FIG. 30. INTERIOR—BUNGALOW OF J. E. WHITIN, UXBRIDGE, MASS. LORING & LELAND ARCHITECTS.



FIG. 31. TWO-FAMILY HOUSE, PINEHURST, N. C.
Loring & Leland, Architects.



FIG. 32. BUNGALOW OF J. E. WHITIN, UXBRIDGE, MASS.
Loring & Leland, Architects.

II

The Workingman and His House



THE laboring man is coming into his own. The advantages of organization and unified control are receiving abundant demonstration in the present results of the long struggle that the labor organizations have for years been waging against the misshapen, one-sided and unorganized industrialism of the modern world. The power of capital allied with brains and education, the inertia of slowly-built-up traditions, and the apathy of society at large, have long resisted the assaults of the unions, but are at last yielding, reluctantly in most cases, intelligently and sympathetically sometimes. In the early stages of the struggle the excesses and follies of the labor forces doubtless retarded their success, and inevitably provoked corresponding excesses on the side of the employers, while alienating the sympathies of the general public. But the light has penetrated the dark places on both sides. The desperate war of classes that once seemed impending is less likely now to occur, because the community at large, which is the sufferer in every case from strikes and lockouts, has begun to discover its own share and interest in the struggle. From a fight by more or less violent means between two opposed armies for the special interests of each, the struggle has become one of two opposed systems representing distinct ideas, in which all are concerned. The growth of Socialism among the "intellectual" and "non-laboring" elements of society is evidence of this. And since the world-war has spread its dark cloud over the earth and the foundations of ancient systems and beliefs have been shaken, many eyes have been opened. We have come to see that the position and conditions of manual labor workers, the toiling masses, are a National as well as a community concern. We are learning that until the relations of employers, employed, the general public and the Government are adjusted upon a basis of righteousness and justice, there can be full security neither for society nor State.

The fundamental evils of the industrial system which grew up during the nineteenth century have been the commercial exploitation of labor and the dehumanization of the laborer. Modern industrial production is based on the "division of labor," the elimination of muscular effort, the standardization of parts, and the mechanization of operations, all under the dominance of the ideal of productive efficiency by the increase of a standardized output with decrease of labor costs. There is nothing intrinsically or essentially vicious in any of these aims. The manufacturer and investor have a right to desire increased profits, the superintendent to aim at increased efficiency of production; while the standardization of quantity-products and the elimination of muscular strain for the worker, by the use of power machinery, not only are not vicious, but are desirable ends in themselves.

The evils of modern industrialism lay not so much in these aims as in their abuse by excesses which wholly left out of sight the interests of the workers. These were exploited commercially, and that means that they were treated not as men and women with souls, affections and passions; not even as animals, which are cared for by their owners as a matter of common-sense and self-interest. They had become, in the minds of their employers, inanimate units, machines, or rather merely the cogs and levers of machines. Indeed, they had this apparent advantage, for the employer, over machines, that they involved no first cost whatever, nothing but use-rental, that is, wages; and seldom any cost for repairs.



FIG. 33. BIRD'S-EYE VIEW OF CONNECTICUT DEVELOPMENT—
BRIDGEPORT HOUSING CO. SCHENCK & MEAD, ARCHITECTS.

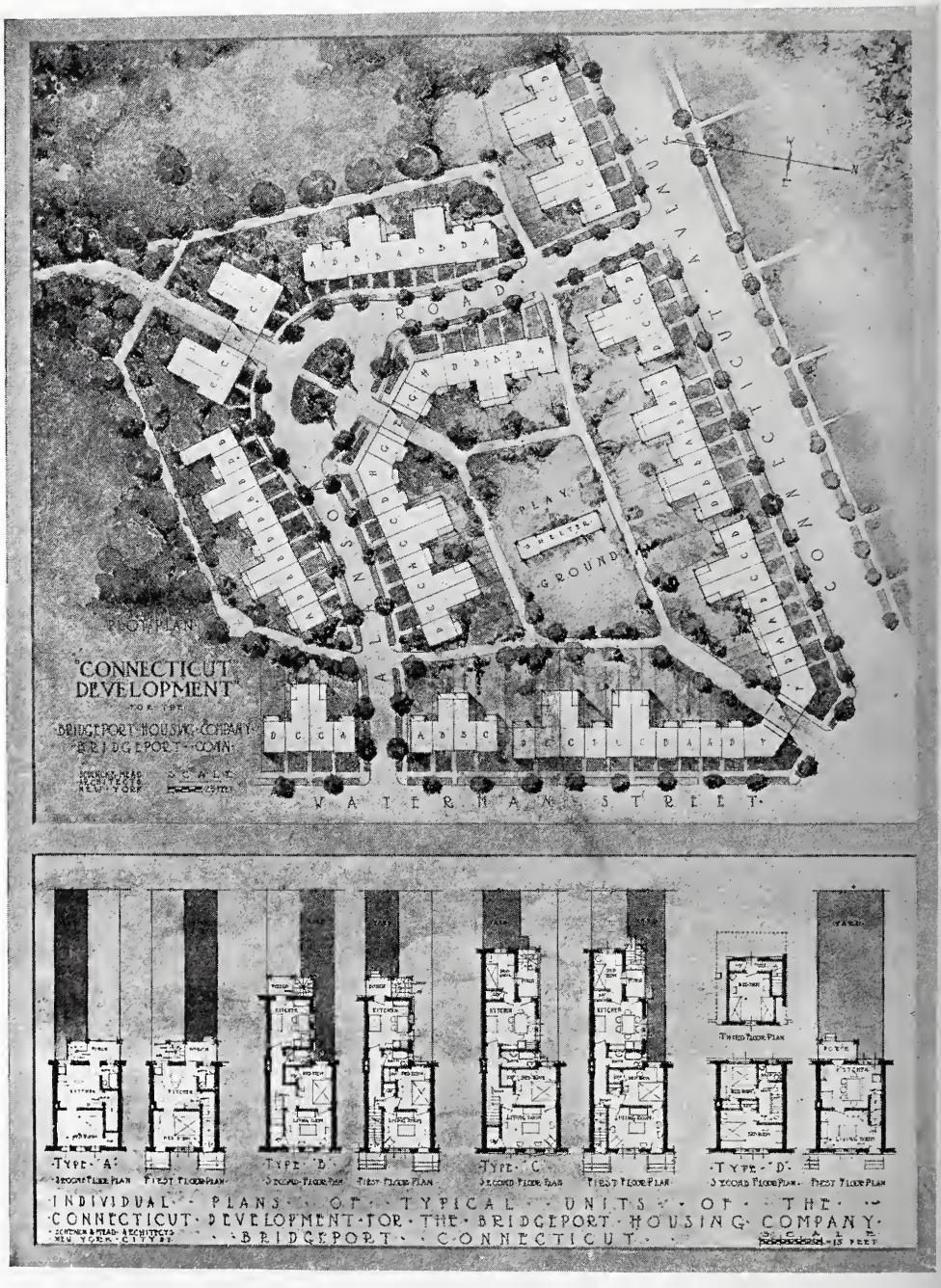


FIG. 34. GENERAL PLAN AND TYPE PLANS—BRIDGEPORT HOUSING CO. DEVELOPMENT, BRIDGEPORT, CONN. SCHENCK & MEAD, ARCHITECTS.

In this country the inpouring of foreign laborers, with lower standards of living thon those of the natives, promoted this downward movement of labor conditions. Moreover the languages these immigrants spoke were, to their narrow-minded and provincial employers, especially to superintendents and foremen, not merely obstacles to mutual understanding, but marks of inferiority. These foreigners were not even "hands"; they were "dagoes," "kanucks," "wops"; often officially mere numbers on a pay-roll. Until recent years they were not even treated as machines, for they were not cared for, kept in condition for efficient production, nor retired, at the employer's charge, for repairs when incapacitated temporarily. Least of all were they cared for on the moral, social and intellectual side, or provided with decent homes, with schools and playgrounds and churches and means for healthy recreation. These things are necessary for human beings, but not for machines, dagoes, wops and numbers.

Hence the slums; hence the mobs and riots; hence the shocking waste of the colossal labor turn-over in our great industries.

I would not ignore the many honorable exceptions to this indictment. All praise is due to the not inconsiderable number of employers and concerns which, years ago, began to set the example of an enlightened and Christian treatment of their employees,* by providing them with a decent environment both at home and in the factory, with schools and recreation and a share in the profits of their labor. But the indictment is true of our labor conditions in the mass, especially in our mining and metal and lumber industries and in our city factories, and to a less extent, but too generally, in our textile industries.

The awakening of the public conscience, aroused by the growing scandals of strikes, lock-outs and mob violence, as well as by the persistent efforts of organized labor to make the human rights of the laborer a matter of public concern, has in recent years resulted in many reforms. Both the State and the Church have advanced to higher ground than they dared formerly to occupy. Great corporations and many individual employers have seen a great light. When a notable newspaper like the "Evening Post" of New York makes public at great length the investigations of Mr. Bruere into the genesis of the I. W. W., exposing the inevitableness of violence as the fruit of injustice, and tracing the roots of the I. W. W. movement back to the fundamental inequity of the general industrial situation, it means that we have taken the first steps towards a solution of the problem: we are seeking to understand its facts and factors. We are learning that human beings cannot be forever treated like cattle or like commodities or like machines. We are learning that the colossal turn-over of labor—impermanence of employment, constant shifting of laborers, and all the loss of efficiency that results—is not only a frightful wrong to the laboring class as a whole, but a blot on society, a danger to the peace of the state, and a terrible handicap to National productiveness. We are learning that a discontented worker is a poor worker; and that a healthy, happy worker in a decent home is worth more, both to the State and to his employers, than one who is an unhealthy, unhappy wanderer from one factory and slum to another factory and slum.

Our entrance into the war has enforced all these lessons, bringing them widely to the consciousness of millions who had never before given serious thought to these problems. We architects are facing more than one side of the many-faced situation. I hope every one who has not already done so will read Mr. F. L. Ackerman's earnest and eloquent paper on "The Real Meaning of the Housing Problem," read at the A. I. A. Convention in Philadelphia last May, and published in the May issue of the "Journal" of the Institute. In that paper the relation between the housing problem and the labor problem is made very clear. I close this introductory section with these sentences from that paper, which embody the vital kernel of the discussion:

*See page 313 for an early example in Massachusetts; also on pages 317-320, illustrations of houses built in 1907 for the Aluminum Co. of America, at Massena, N. Y.

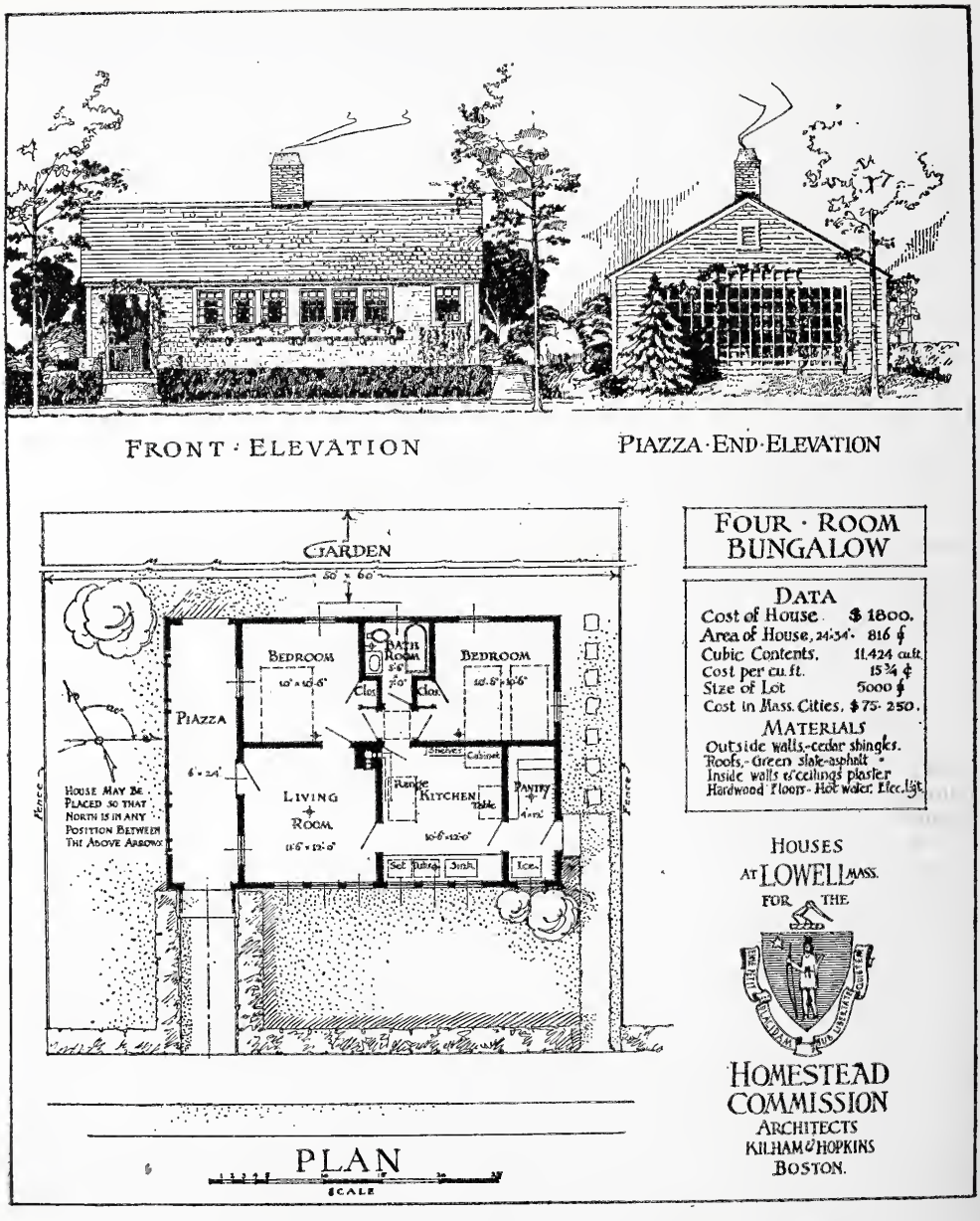


FIG. 35. FOUR-ROOM BUNGALOW—MASSACHUSETTS HOMESTEAD COMMISSION HOUSES, LOWELL, MASS. COST, $1,800. KILHAM & HOPKINS, ARCHITECTS.

"Can you expect men living in temporary houses in a temporary city" (we may add, or in tenement houses in a slum) *"with no more vivid purpose in view than a living wage, to remain content? You cannot.*

"The first problem of industry is so to organize itself that labor, that work which the mass of men do, shall in itself serve the purpose of a focus of creative endeavor."

II.

The war has greatly stimulated—if its suddenly created conditions did not first awaken—interest in community housing for industrial workers. Both the Federal Government and the great industries came to the realization of the fact that a huge responsibility and a huge problem had been precipitated upon them by our declaration of war, for which even the enormous expansion of munitions manufactures during the three previous years had by no means prepared us. The first efforts to provide housing for the thousands of workers in the vast new plants that arose, as by magic, where open country had been, were, like all American expedients in emergencies, cheap, partial makeshifts, sufficient for the moment's need, but totally inadequate and unsuited for permanent use. They were villages of shacks and barracks, not of homes. They were built and financed on no definite system. It took time for our authorities, State and National, military, naval and civil, to come to any real understanding of the problem that was forced upon them. They took no counsel at first either of the experience of Great Britain or of the warnings of experts in our own profession. But in this, as in everything else that we have undertaken since April 6, 1917, confusion and blundering in the initial stages are giving place to intelligent management and rational organization. Many of the great manufacturing plants engaged on Government contracts have anticipated the action of the Government by intelligent housing systems carried out under expert advice and upon designs by competent architects. The Department of Labor has, as all doubtless know, created a Bureau of Housing under the direction of Mr. Otto L. Eidlitz of New York, with a staff of expert architects and engineers in charge of its various administrative divisions. It has entrusted a number of the housing enterprises in different cities to local or near-by architects and engineers, since the work under its charge is too vast to be carried out in detail by its own staff. The Ordnance Department of the Army has created a Housing Branch of its Industrial Service Section under Percy R. MacNeille of New York. The Emergency Shipbuilding Corporation has built or is building a new village for its workers near Camden, N. J., called Yorkship, under the direction of Electus D. Litchfield, of New York. To Miss Marcia Mead (Schenck and Mead) has been given the designing of a new community of workers' houses at Bridgeport, Conn., by the Bridgeport Housing Co. (Fig. 11). Miss Mead is also the architect, as the result of a competition three years ago, of the Wilson Memorial housing development for Washington, D. C. To Mann and MacNeille has been given, among other enterprises, the extensive scheme of shipbuilders' homes at Bristol, Penn., for the Merchant Shipbuilding Co. Murphy and Dana of New York are the architects for the Department of Labor's housing development at Waterbury, Conn., and the Department's Housing Bureau has from time to time issued lists of additional architects and engineers appointed to design and superintend others of its extensive undertakings in the same line. Unfortunately these lists are not at present available for the writer of this paper.

The number of corporations, private and public, that have recently put into operation extensive house-building enterprises is surprisingly large. Thus on a memorandum prepared a few weeks ago, and by no means complete to date, I find the following:

At Detroit, Mich., the "Jefferson Ring" development for the Solvay Process Co. (Mann & MacNeille); at Flint, Mich., houses for the Civic Board Association (Davis, McGrath & Kiessling); at Youngstown, Ohio, the Loveland Farms development for the Youngstown Sheet

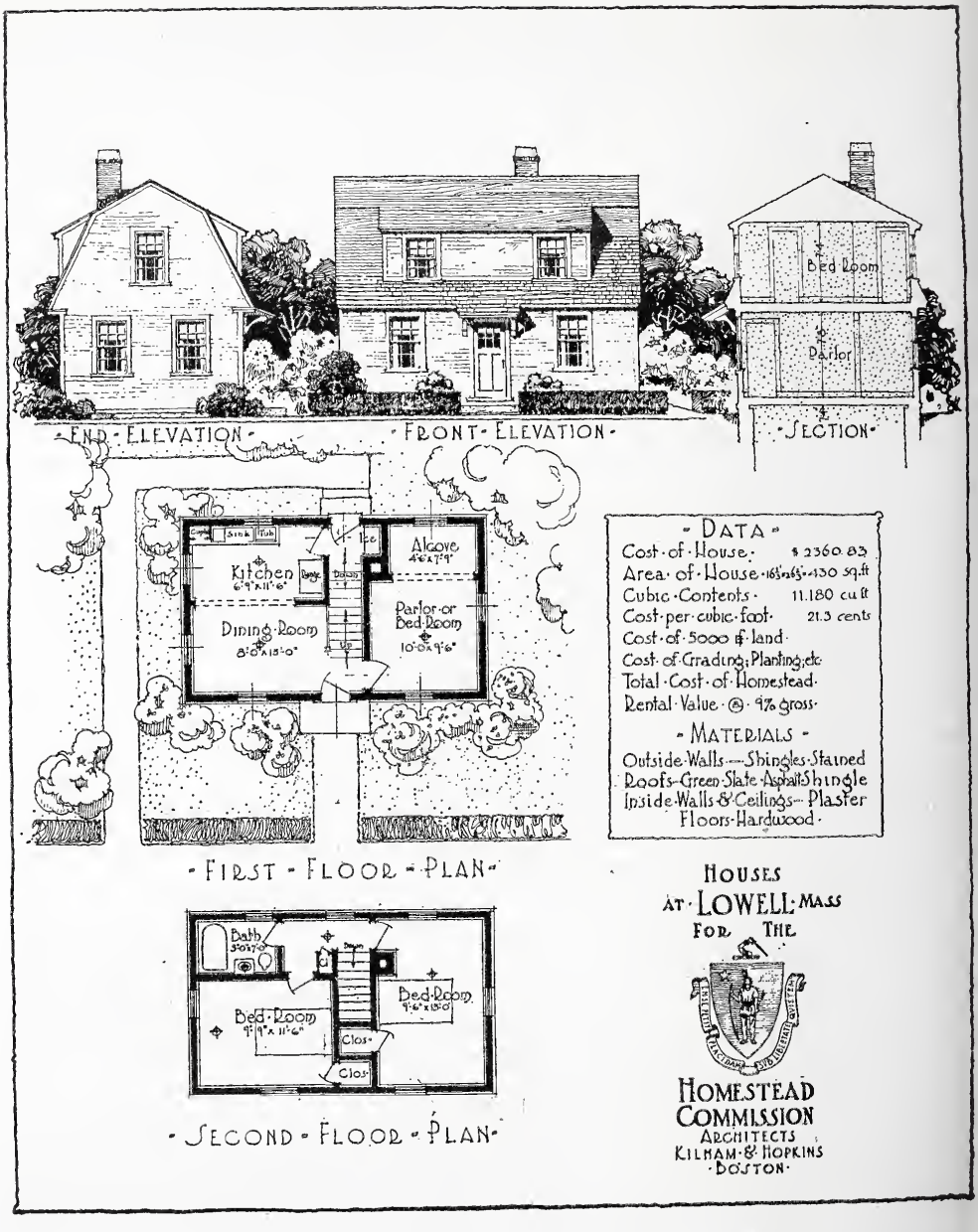


FIG. 36. TWO-STORY COTTAGE—MASSACHUSETTS HOMESTEAD COMMISSION HOUSES, LOWELL, MASS. COST, $2,360. KILHAM & HOPKINS, ARCHITECT.

and Tube Co.; at Coatesville, Pa., houses for the Midvale Steel Co. (W. Leslie Walker and C. W. Leavitt, Jr.); at Worcester, Mass., a village for the Worcester Grinding Co. (Grosvenor Atterbury); at Massena, N. Y.,* houses for the Aluminum Co. of America (Albert H. Spahr); at Akron, Ohio, "Goodyear Heights" for the Goodyear Tire and Rubber Co. (Schwann & Manning); at Tyrone, N. M.,** for the Phelps Dodge Co., a village by Bertram G. Goodhue; at Danielsonville, Conn., houses for the Connecticut Mills Co., by W. H. Cox. The firm of Kilham & Hopkins (Boston) are the architects for the Massachusetts Homestead Commission, the first—and at present writing, probably the only—State Commission on housing, operating under a State law, which provides for lending the State's credit in aid of home-building. Under this law they have designed and erected workers' houses of a variety of types at Lowell, and are also engaged upon other housing enterprises in Massachusetts,† e. g., for the Boston Dwelling House Co., the Salem Rebuilding Trust, the Naumkeag Steam Cotton Mills, and the Highland Road Land Trust at Brookline. The War Work Council of the Y. W. C. A. has created a Housing Committee with Duncan Candler as its supervising architect. I find on the list mention of other housing schemes at Rome and Syracuse, N. Y., Athol, Mass., Akron, Ohio, and Kestler, Pa.

This is a respectable though very incomplete list, showing how widespread is the new intelligent interest in the housing of workingmen, and suggestive of the enormous economic investment now being made in such enterprises. A list complete to the first of October (this list was prepared early in June) would doubtless double the amount of this investment.

Of the profoundest importance is the question of the financial conditions of these enterprises. No solution of the problem of housing for workingmen can possibly meet the situation if it subordinates the interests and needs of the laborer to the interests of private profit. Whether managed by a syndicate or by a corporation employing labor, the two interests must be made mutual, not adverse. Not only must the house be such as the worker and his family will be content to occupy, but the price and conditions of rental and of sale must be such as to appeal to him. These must take into account the mobility of labor, and provide fair and generous terms for the transfer or resale of the house in case of the worker's death or removal to another place. The majority of housing enterprises, whether private syndicated speculations, corporate employers' undertakings, Government undertakings like Yorkship, or Government-assisted enterprises like that at Bridgeport already mentioned, provide for rental with privilege of purchase on installments running through a protracted period of years with a moderate interest charge. But while it is desirable to encourage permanence of residence and employment by easy terms of sale, it must be remembered that changes in an industry—the reduction of its output and working forces, fires and explosions, the abandonment of old for new processes of manufacture, reduction of wages, the offering of more profitable employment elsewhere—may make necessary the removal of a worker from the place where he had expected and wished to remain permanently. This will certainly occur on a vast scale after the close of the war. How shall the laborer's equity in his half-purchased house be disposed of at such a time? Who is to shoulder the loss consequent upon the closing up of an industry and the inevitable desertion of the village which it has built up, or which some real estate syndicate has built for it?

How can the workers of a community be protected from being victimized by the tempting offers of real estate sharks and swindlers in the immediate neighborhood of a model village?

These are questions by no means settled. Both the States and the Federal Government will doubtless have to study them with extreme care and to initiate, very cautiously, legislation to meet the situations they suggest. I mention them

*See Page 317-320.
**See Pages 314-316.
†See Pages 306, 308, 310, 312.

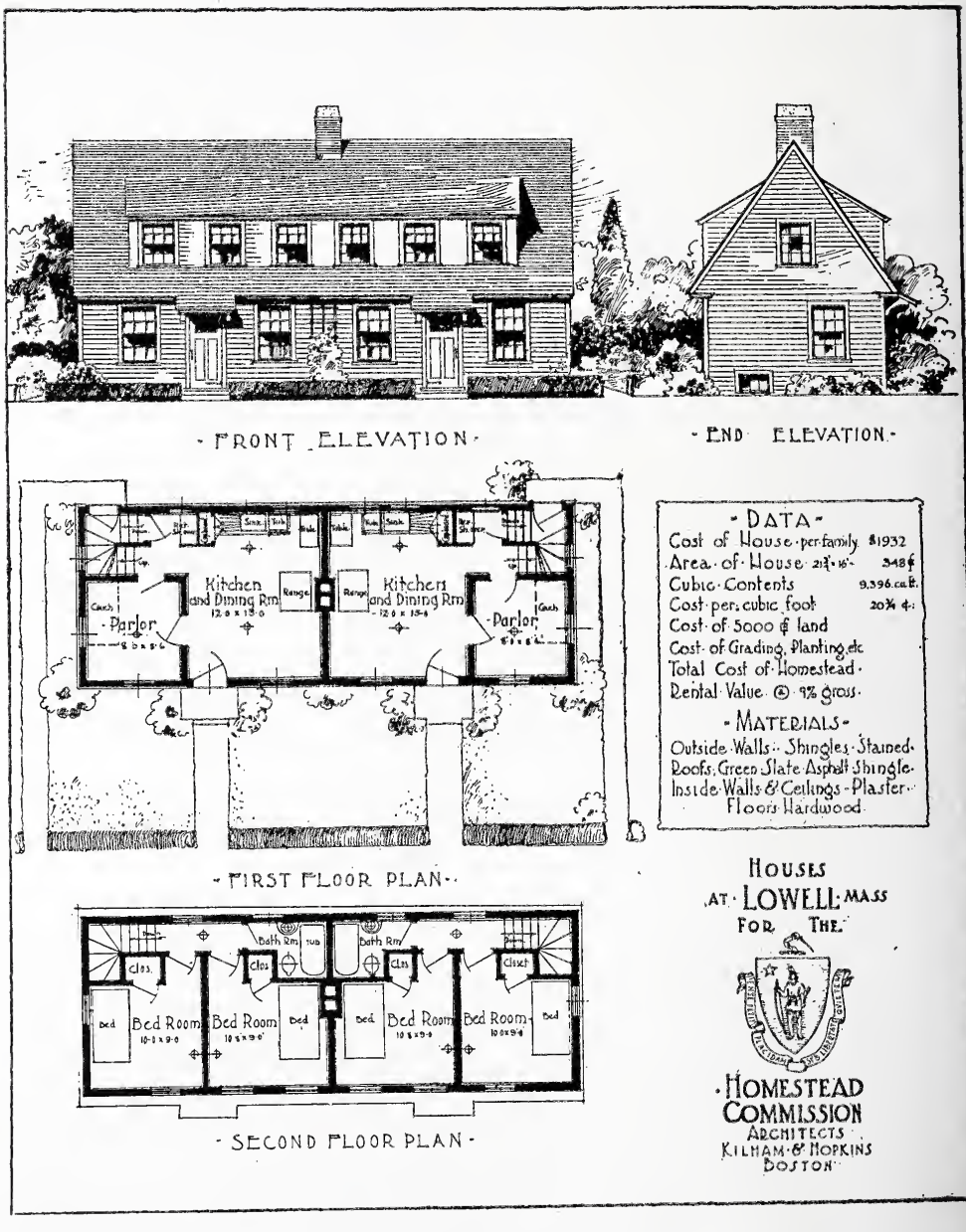


FIG. 37. TWO-FAMILY HOUSE—MASSACHUSETTS HOMESTEAD COMMISSION HOUSES, LOWELL, MASS. COST, $3,864. KILHAM & HOPKINS, ARCHITECTS.

without even suggesting their solution, which is far beyond the wisdom of any one man, even of an editor. The "Journal of the American Institute of Architects" is to be commended for including their discussion in its program for "An American Competition for the best solution of the House Problem" now drawing to a close. The three sections of the program — The Social Purpose, The Economic Method, The Physical Plan— rightly envisage the relative importance of these three aspects of the problem, which are also properly recognized in the admirable make-up of the Jury of Award.

III.

The keen observer among my readers will by now have discovered that this paper has been following the same order of thought as the program just mentioned. The plans and views published in this issue show the various forms which the physical plan and design of workers' houses have taken under differing conditions at the hands of several architects. These show, it is true, only the smallest fraction of the numerous enterprises in my list, but they are probably typical. Others have been described and illustrated in the "American Architect," the "Journal" of the Institute, in former numbers of the "Record" and in other periodicals.

The workingman's home, as proposed in the various schemes shown, is seen to be the resultant of two forces: one social, the other economic. By the first, the designer is urged to meet the demand for a house in which the occupant and his wife or family can live in self-respecting comfort and health. This demands a minimum of two rooms and a bath, with adequate provision of light and air and closet space; a larger number of rooms for larger families and more prosperous workers. Two rooms mean that one is used as kitchen and living room in one; the other is, of course, the bedroom (Type A, plan on page 304). It is a small provision of accommodation for a family; obviously a couple with more than one infant child would find it inadequate. But the other force, the economic factor, forbids enlarging it, in the case of workingmen of the lowest-paid class. To equate the cost of land and building, interest, insurance and taxes, with the resources of an unskilled or little-skilled laborer is a difficult task. The land occupied, the size of the rooms, the height and cost of the building, must all be reduced to the lowest possible limit consistent with safety and health, in order to bring the house, whether for sale or rent, within the means of the common laborer or little-skilled worker.

As compared with the cost in England, within the past two years, of $900 to $1,500 or thereabout for the smallest tenements or individual cottages in workers' villages, the cost of the majority of the nearest corresponding American types will be about double—from $1,800 to $2,500 or more. In exceptional cases the cost may be less. Mr. Goodhue reports a cost of 13.9 cents per cubic foot as that of the Mexican workers' houses in the Phelps Dodge village of Tyrone, New Mexico (page 315).* Messrs. Kilham & Hopkins' houses for the Lowell mill-hands under the Homestead Commission cost $20\frac{3}{4}$ to $21\frac{1}{3}$ cents per cubic foot for two-story houses, whether for one, two or three families. On the other hand, in houses for four families for the Naumkeag Corporation at Salem the cost was reduced to 13 cents (page 312). These are all frame houses, shingled in the first case, stuccoed in the second.

The result in the Salem houses is interesting. They are two-storied, with two families on each floor. Each tenement has a large kitchen, a parlor, three chambers and a bathroom; the cost being $2,000 per family for this exceptionally generous accommodation. Fifteen dollars rent per month would return an interest of 9 per cent. on the initial cost of the house itself. The houses built by the Emergency Fleet Corporation at Yorkship, on the other

*Mr. Goodhue has supplied this additional information with regard to the cottages for American workmen at Tyrone. Those built in the first series cost 15.1 or 15.2 cents per cubic foot; those of the second series, which are more elaborately equipped with closets, porches, shelving, etc., and of which several have tiled roofs, cost on the average 17.3 cents. These houses average five rooms to a family, with an average cost of from $2,700 to $3,200 per family. They are all owned by the company and rented to the workmen. The monthly rental is not stated.

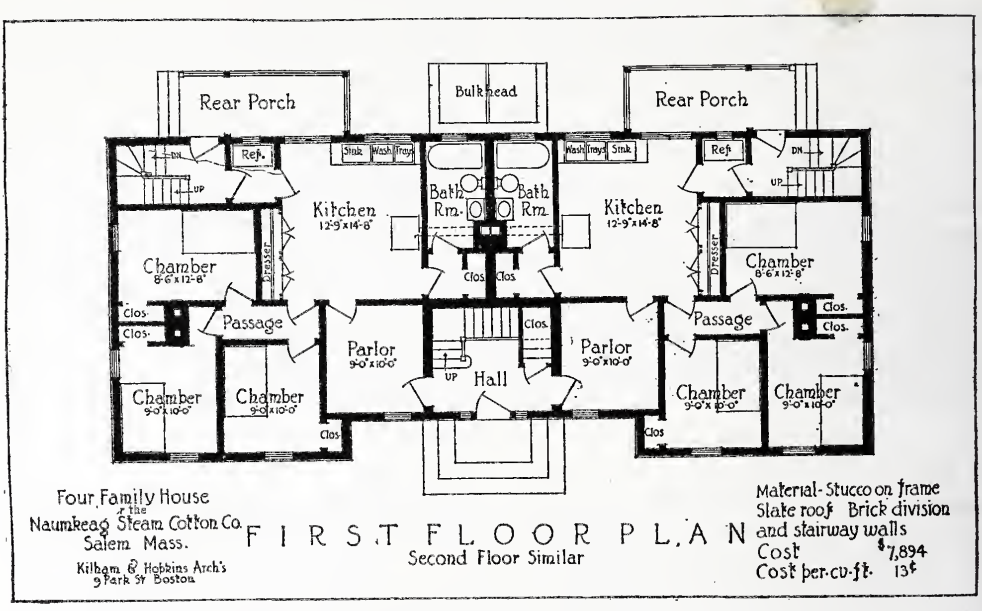


FIG. 38. FLOOR PLAN OF FOUR-FAMILY HOUSE—MASSACHUSETTS HOMESTEAD COMMISSION HOUSES, SALEM, MASS.
Kilham & Hopkins, Architects.

hand, cost on an average, land improvement included, over $3,100. These costs reflect the present high prices of labor and materials, due in part, of course, to the high pay of the very workers for whom they are incurred. The very attractive two-family and three-family houses built from designs by Albert H. Spahr at Massena, N. Y., average the same as the Salem houses previously described (page 311); that is, they cost $2,000 per tenement, and comprise generally five rooms and bath. They are of brick for the first story, frame and stucco above. Mr. Kilham's one-story shingled cottages for Lowell have kitchen, living room, pantry, bath, and two bedrooms, and cost $1,800, at 15¾ cents per cubic foot. On the other hand the Bridgeport houses shown on pages 303-304 cost as high as 30 cents per cubic foot; hence the necessity of the closest economy of both land and floor space. The Bridgeport industries, however, employ a high class of skilled labor, able to pay a higher rent than those in many other industries. These are fair examples of cost in the Eastern States.

As to arrangement and type, we have first the individual cottage, as at Lowell (Fig. 35), Tyrone, N. M. (Fig. 41), and in many other open situations where land costs are moderate; next come "semi-detached" cottages or double houses; then blocks of three, four or more houses, each for one family. These last are, however, not favored except in more or less congested districts, as at Bridgeport, Conn. (page 303). The obstacles to the free circulation of air and to abundance of light in such houses are a serious objection, though not insurmountable if the houses are made sufficiently wide and shallow.

Next to the individual houses, in which each family occupies an entire unit of construction from cellar to roof, come the tenements or apartment houses, in which two or more families are housed under one roof, each family on a floor. The elimination of stairs in each apartment is a great comfort to many a tired worker; and as these houses are seldom more than two stories high, the upper apartments are fully as desirable as those below. The Bridgeport houses already mentioned are nearly all of this character, having apartments of from two to four

rooms and baths, though there is shown one type (D) of individual houses of five rooms. Boarding houses do not come within the field of this article.

The majority of the houses shown in these schemes, as in others that have been published, are of frame construction, shingled or stuccoed, with slate roofs. At Yorkship Village brick is used for the walls of some of the houses; at Massena the lower story is of brick, the second of frame shingled or stuccoed; at Tyrone all the walls are of brick stuccoed and the construction is semi-fireproof, the floor and roof timbers being of wood, but protected as far as possible by the use of wire lath and fire stops. A large proportion of the houses there for American workmen are but one story high. The Bridgeport houses are of ordinary brick construction, two and three stories high.

As to style, the most common treatment follows Colonial precedent, but one observes the same variety, taking the various enterprises into account throughout the country, as in all other branches of our domestic architecture. Thus the four examples illustrated in this number, respectively in Massachusetts (Lowell and Salem), Connecticut (Bridgeport), New York (Massena) and New Mexico (Tyrone), exhibit each a different style treatment. The type of house found desirable in each case, the materials available, the local environment and traditions, and the personal equation have all had their part in producing this variety.

It is noticeable, and not at all surprising, that fireproof construction is excluded from consideration for workingmen's houses by the present high cost of building materials and of labor involved. For the same reason hollow tile stuccoed and poured concrete construction seem not to have found favor, and all the picturesque effects to be obtained from rough stone are likewise ruled out.

In these materials and in the use of brick the English and French have an advantage over us, their cost and that of mason-work generally being lower there than here, even in proportion to the resources of the laborers themselves. Any study of the English workers' cottages recently erected, or of the prize designs for French farmstead buildings for the reconquered devastated regions, will emphasize this advantage on the side of the European designer.

The illustrations 46 and 47 show houses designed and built for, and occupied by, the highest class of American skilled labor—such as machinist foremen and optical workers. Whitinsville has been noted for over fifty years for the liberal and intelligent treatment of employees by employers in its various industries, with the result of attracting a high class of labor and encouraging permanence of employment. Long before the present widespread movement for industrial housing reform had begun, the Whitins had established a system for the sale of houses to workers, many of whom have grown old in the employ of one or another of the Whitinsville industries.

Closely related to enterprises for industrial or workingmen's housing is that of community development in the suburbs of large cities, with all the related problems of city planning and suburban extension.* As under our American traditions suburban developments have never been taken under Governmental control, they have depended almost entirely on the enterprise or cupidity of real estate syndicates. They have therefore been treated as speculative investments, in which the interests of the suburban dweller have been considered only just so far as the income from the investment could thereby be augmented or made more secure. They have not been designed for workingmen, but as a rule for people of moderate means in business or the professions, and in many cases an "enlightened self-interest" on the part of syndicates seeking to attract a superior class of tenant has resulted in an intelligent effort to produce attractive designs and to create an attractive neighborhood. As in the case of industrial communities, however, the price of land near the cities and the present high cost of all building materials and labor have necessitated great economy of design and construction, and the striking of a careful balance

*See an interesting discussion on suburban development by zones, by Professor Otto Wagner of Vienna, in the "Architectural Record" for May, 1912.

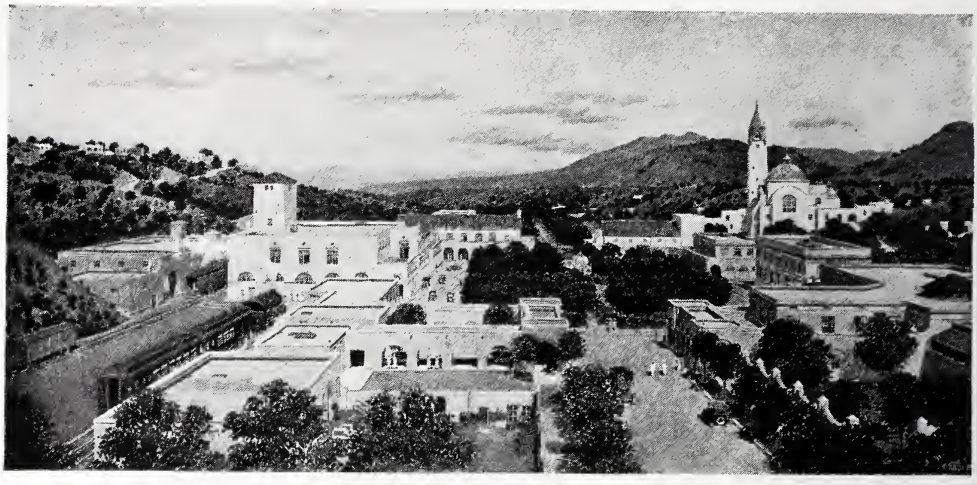


FIG. 39. BIRD'S-EYE VIEW OF WORKERS' VILLAGE FOR PHELPS DODGE CO., TYRONE, N. M.
Bertram G. Goodhue, Architect.

between the cost of desirable improvements and the resources of the intended tenants.

The illustrations of "Oakenshäwe," on pages 322-325, show the interesting results attained by Messrs. Flournoy and Flournoy in a suburban development near Baltimore. A memorandum by the architects supplies the following notes:

"This community forms the connecting link between the closely built-up section of Baltimore on the south and the suburb of Guilford which borders it on the north. Twenty-seven houses have been completed and sold. The construction of thirty-three more has been interrupted owing to the Government having seized the materials.

"The completed houses occupy both sides of Guilford Terrace extending north from University Parkway toward Southway, Guilford. They are built in five groups: A, B and C containing six houses each, D containing four and E five. Widths 21 feet 6 inches and 22 feet. Depths of lots 100 feet to 105 feet. The walls are of dark red natural brick relieved by occasional stuccoed bay windows, white porches, white cornices, etc. Roofs of bluish gray slate, 8½ inches to the weather. The porches have floors of Welsh quarries with brick borders. The multiplicity of front porches is to be regretted from an artistic standpoint, but it was decided by both owners and architects that, in order to expedite sales, it would be advisable to defer to the popular taste. The interior standing finish is of yellow pine, generally painted white. Doors are of birch or fir with mahogany finish. The first floors of all houses and second floors of those in groups D and E are finished with quartered oak; others being of No. 1 yellow pine flooring.

"In designing the houses, the architects endeavored, as far as was consistent with economy, to obtain as much variety as possible, not only in the exterior appearance, but also in the interior arrangement of rooms, there being few duplicate plans in any one group. As will be seen in the photographs, the porches vary greatly in form and are all separate, additional privacy being gained in some cases by the use of lattice."

The above three paragraphs are taken from a memorandum by the architects, who further state that the cost of those houses built in 1916 was only 15½ cents per cubic foot, and of the 1917 houses, 17½ cents. This low cost was effected, in spite of the very careful construction and finish of the houses, by the systematic use of stock sizes of lumber, doors, windows, etc. The memorandum concludes thus:

"The houses cost less to build and were sold more rapidly than those in a number of other speculative operations in the

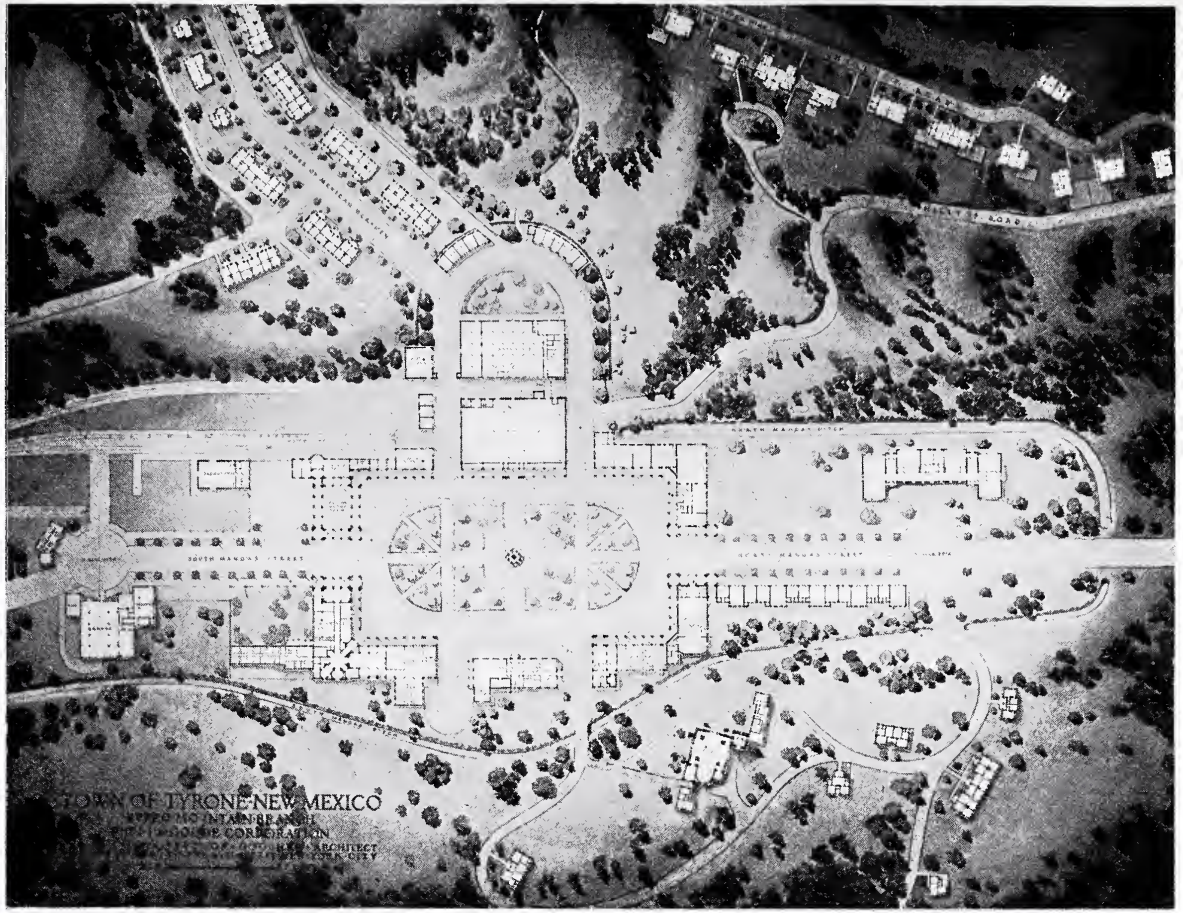


FIG. 40. GENERAL PLAN OF WORKERS' VILLAGE FOR PHELPS DODGE CO., TYRONE, N. M. BERTRAM G. GOODHUE, ARCHITECT.

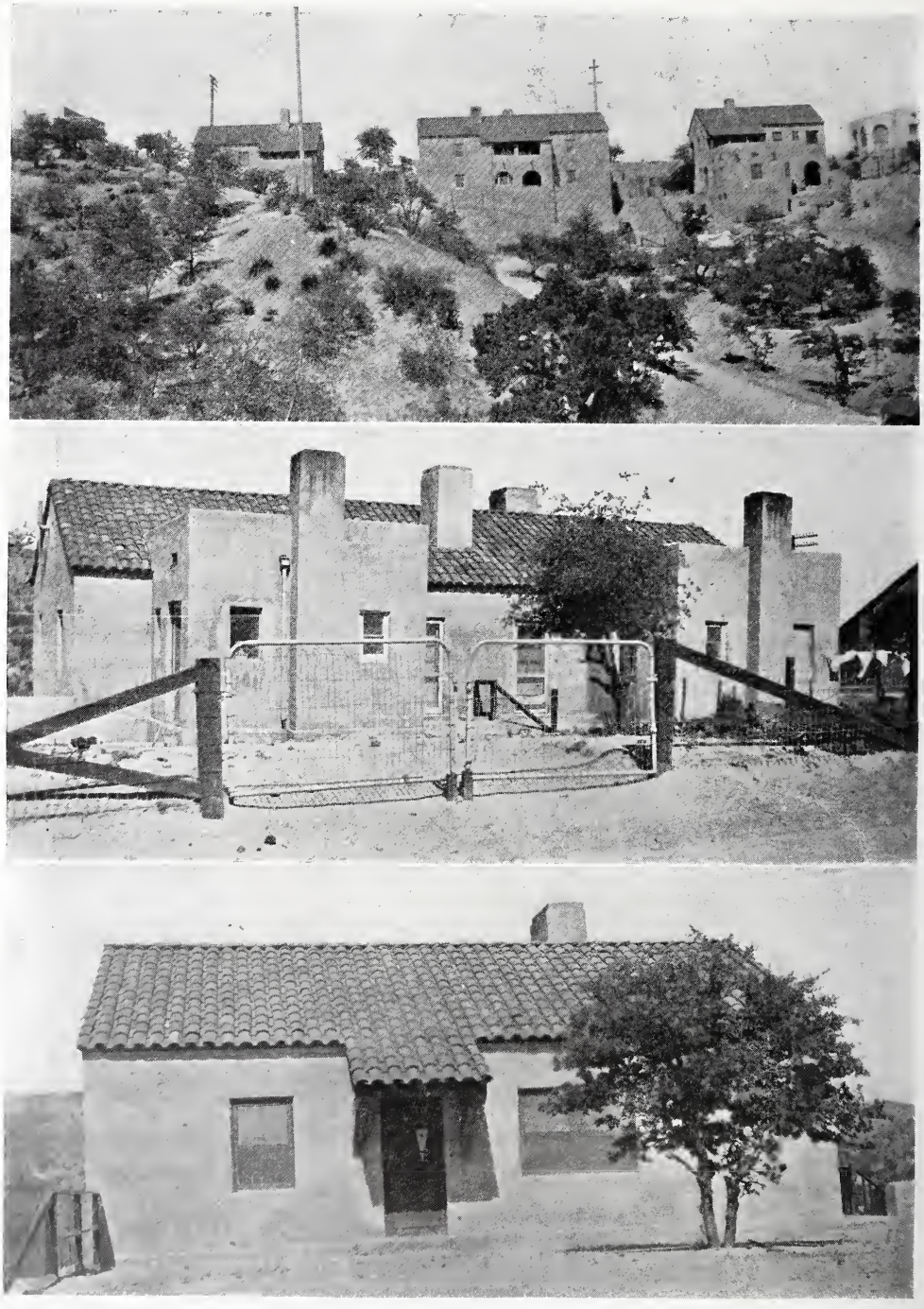


FIG. 41. TYPES OF COTTAGES FOR AMERICAN WORKERS—WORKERS' VILLAGE FOR PHELPS DODGE CO., TYRONE, N. M.
Bertram G. Goodhue, Architect.

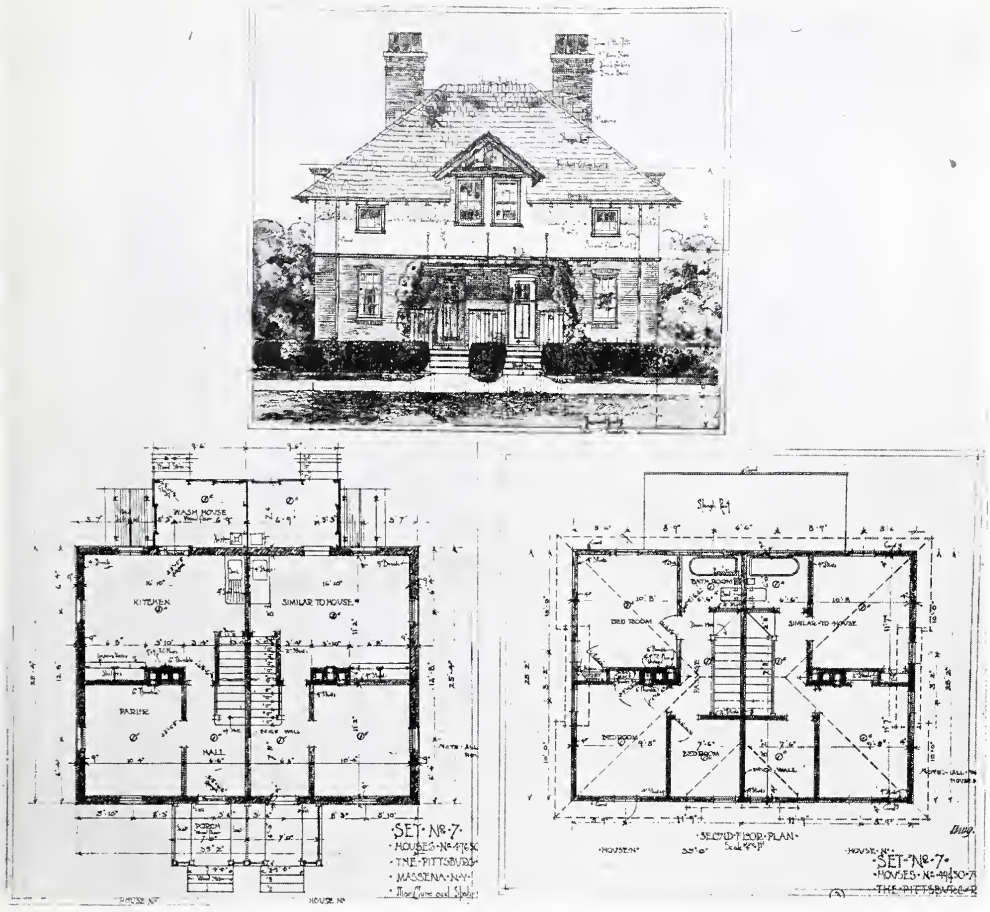


FIG. 42. ELEVATION AND PLANS OF TWO-FAMILY HOUSE—ALUMINUM CO. OF AMERICA, MASSENA, N. Y.
Albert H. Spahr, Architect.

immediate neighborhood, in the construction of which the usual method was pursued of dispensing with the services of the architect. This seems to controvert the commonly accepted opinion that an architect is an expensive luxury.

"The owner and builder of Oakenshawe is the Philip C. Mueller Building Company of this city, to whose quick appreciation of the architects' suggestions and skill in carrying them out must in large part be attributed the somewhat artistic as well as the financial success of the work."

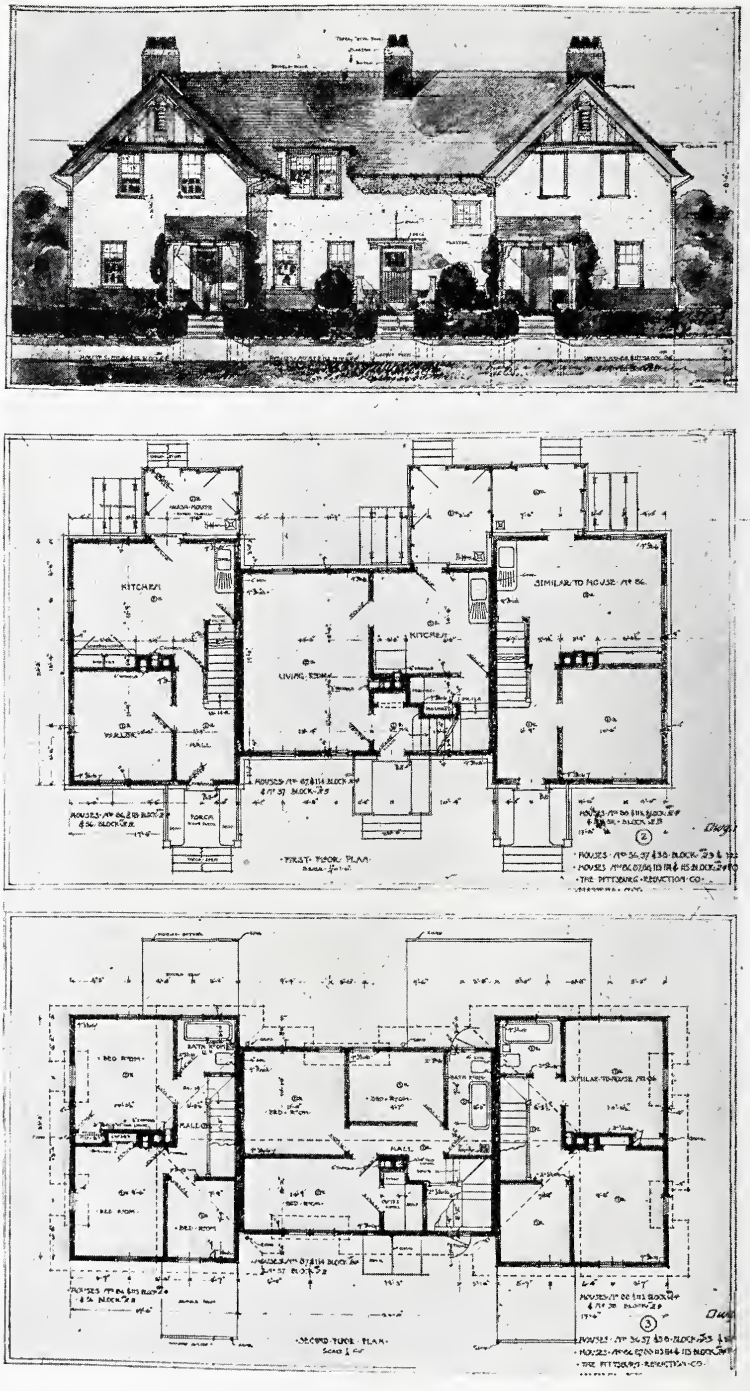


FIG. 43. ELEVATION AND PLANS OF THREE-FAMILY HOUSE—ALUMINUM CO. OF AMERICA, MASSENA, N. Y. ALBERT H. SPAHR, ARCHITECT.

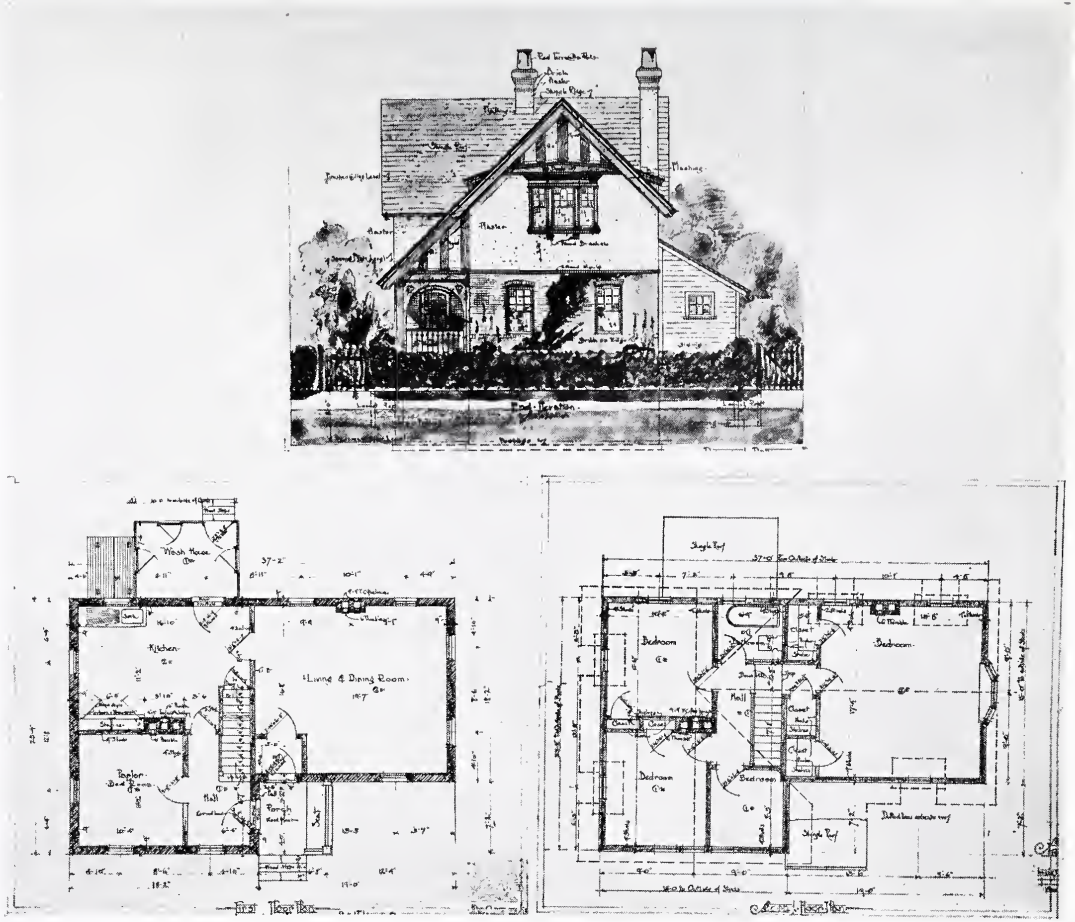


FIG. 44. ELEVATION AND PLANS OF SEVEN-ROOM HOUSE—ALUMINUM CO. OF AMERICA, MASSENA, N. Y. ALBERT H. SPAHR, ARCHITECT.

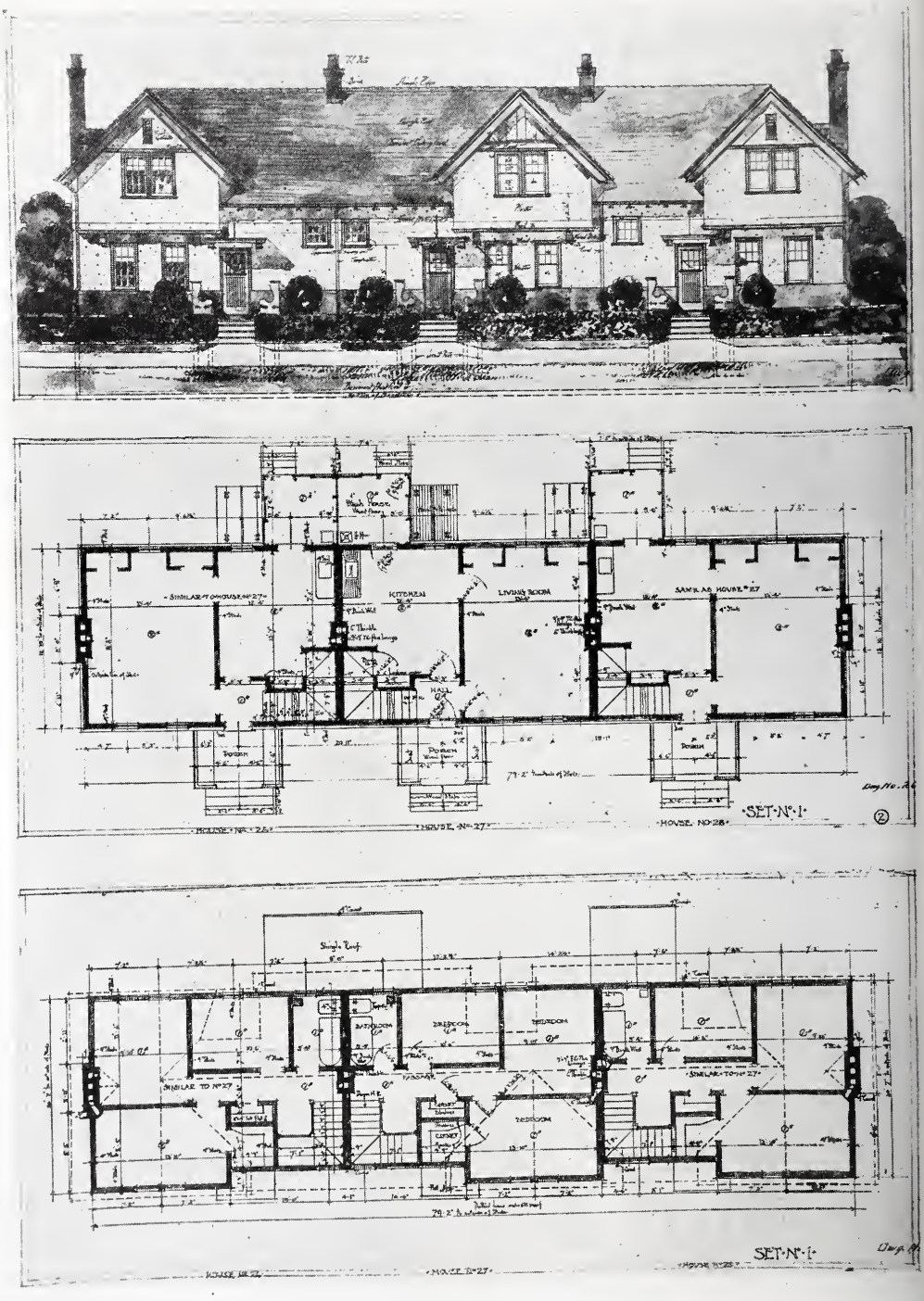


FIG. 45. ELEVATION AND PLANS OF THREE-FAMILY HOUSE—ALUMINUM CO. OF AMERICA, MASSENA, N. Y. ALBERT H. SPAHR, ARCHITECT.



FIG. 46. FOREMAN'S HOUSE—AMERICAN OPTICAL CO., SOUTHBRIDGE, MASS.
Loring & Leland, Architects.



FIG. 47. TWO-FAMILY HOUSE—WHITIN MACHINE WORKS—WHITINSVILLE, MASS.
Loring & Leland, Architects.



FIG. 48. GENERAL VIEW OF GUILFORD TERRACE, GROUPS D AND E—OAKENSHAWE DEVELOPMENT, GUILFORD TERRACE, BALTIMORE, MD. FLOURNOY & FLOURNOY, ARCHITECTS.



FIG. 49. GUILFORD TERRACE, GROUPS B AND C—OAKENSHAWE DEVELOPMENT, GUILFORD TERRACE, BALTIMORE, MD. FLOURNOY & FLOURNOY, ARCHITECTS.



FIG. 50. ONE UNIT OF GROUP C—OAKENSHAWE DEVELOPMENT, GUILFORD TERRACE, BALTIMORE, MD. FLOURNOY & FLOURNOY, ARCHITECTS.



FIG. 51. END UNIT OF GROUP E—OAKENSHAWE DEVELOPMENT, GUILFORD TERRACE, BALTIMORE, MD.
Flournoy & Flournoy, Architects.

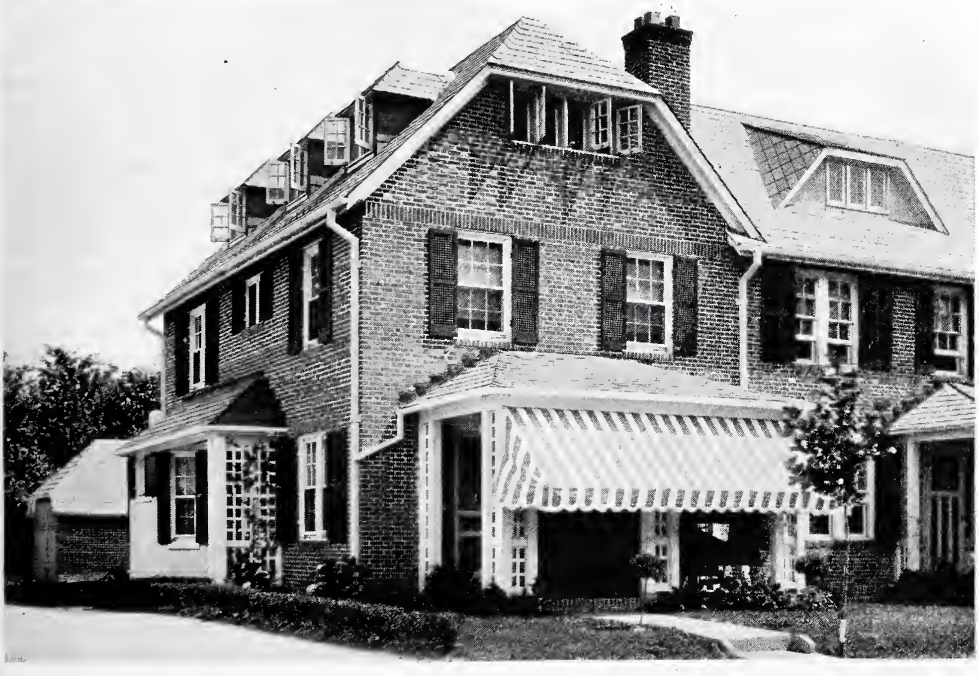


FIG. 52. END UNIT OF GROUP A—OAKENSHAWE DEVELOPMENT, GUILFORD TERRACE, BALTIMORE, MD.
Flournoy & Flournoy, Architects.

II

Of Fireplaces

FROM the point of view of modern scientific efficiency the open fireplace is probably the most extravagant and wasteful of all devices for warming a room. What may be its maximum delivery of B. T. U. per pound or per dollar's worth of fuel consumed I do not know, but it must be small if measured by its power to raise the temperature from 0° to 68° ten feet away from the fire. It has a marvelous capacity for casting heat-shadows in which one may shiver while the intervening object or person is slowly roasting on the side toward the fire. It requires incessant attention to keep its rapacious maw properly suplied with hardwood (3-foot lengths, $29 per cord; 2-foot lengths, $35); and as a scorcher of rugs, a discharger of live-coal shrapnel on to the hard-wood floor, and a most prolific cause of country-house fires, it can claim a record all its own. Whether built on the generous scale of the spacious country house living room, for three and four-foot lengths of cordwood, as in Figure 1, or on the minute specifications of the California or the London boarding house coal grate, it is messy and troublesome, with its dust and ashes, its smoke and soot. It is as sensitive and capricious as a neurasthenic female, sputtering and complaining in one wind, refusing to burn in another, especially in cold weather, and roaring with enthusiasm on mild days, and always as fussy about its food as a dyspeptic patient. When not in use it must be suppressed and hidden by a more or less artistic camouflage of green boughs or autumn leaves—a most cluttering nuisance—or obliterated behind an unsightly "blower," that sheet-iron contraption primarily designed for use as a persuader of its laziness into action.

It has one advantage, however, over the radiator and hot-air register—an advantage highly appreciated by bachelors, absorbers of the fumes of nicotinous leaves, and lazy housemaids—it is a most convenient and capacious catch-all. It accepts willingly and undiscriminatingly cigar stubs, half-smoked "fags," burnt matches, pipe-emptyings and the contents of the waste-basket and of the housemaid's dust-pan. The result is not sightly, but the next time the fire is persuaded to burn between the fireplace jambs, all this *detritus* of the household life is more or less consumed. Every hygienist will tell you that combustion is the surest, completest and most sanitary process for getting rid of rubbish. If only the fireplace would consume its own smoke and ashes, and deliver its hot airs, purified, into the room instead of up the chimney!

Just at this point the agent of the gas company (returning from the installation of a new over-registering meter in the cellar in place of the former apparatus with whose performance the company seems to have been dissatisfied) whispers in my ear. The substance of his whispering is, that none of the objections I have raised against the open fireplace applies to those provided with gas-logs. The gas-log-place demands no provender of costly cordwood or coal. It emits no smoke, produces no ashes, discharges no burning projectiles onto the floor, balks never at northwest or east winds, and kindles instantly at the first lighted match. It is clean, convenient, reliable. True, thou faithful minion of a soulless corporation; but alas! the gas-log-place lacks the one great virture I have ascribed to the fireplace: it has no maw for cigar butts, burnt matches, waste-paper and household dust.

Quæ cum ita sint (as we used to write in our Latin prose books in high-school), since these things are so, how comes it

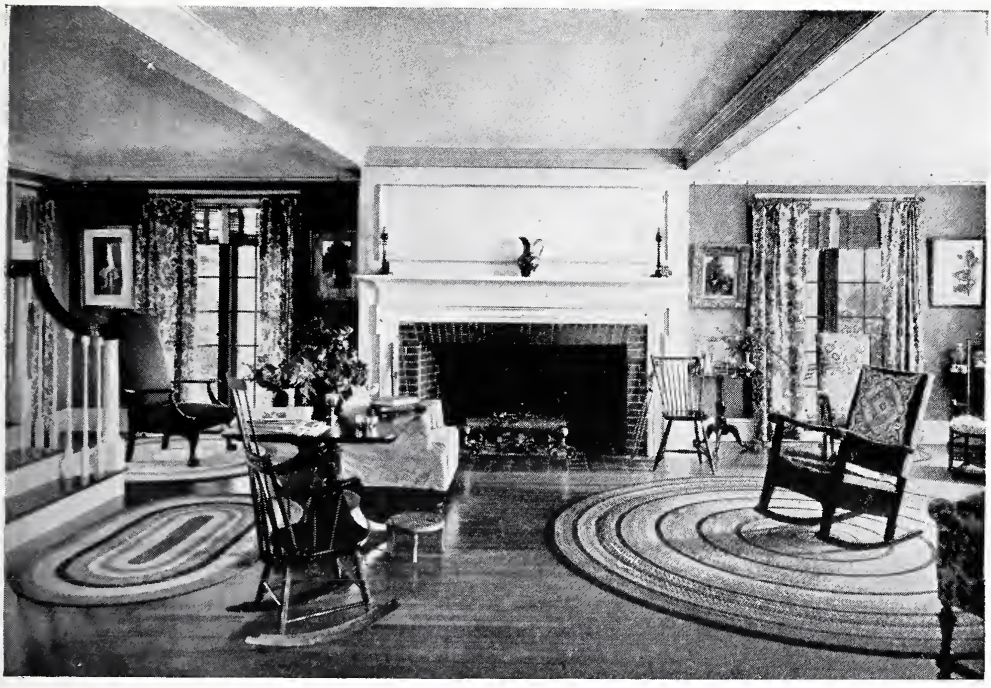


FIG. 53. LIVING ROOM—HOUSE OF LAWRENCE M. KEELER, WHITINSVILLE, MASS.
Loring & Leland, Architects.

that an obstinate public persists in demanding open fireplaces in country houses, and even in city houses and costly apartments? With all the resources of modern science for providing heat and ventilation, what crass stupidity it is to resort to this ancient, old-fashioned, wasteful, troublesome, messy device for inefficient calorification! Are not steam heating and hot-water heating, and hot-air heating, and gas heating and electric heating among them all sufficient for the needs of all our householders? Why not be content with the Johnsmith under-feed furnace, which will run a week (or less) without restoking; or the Smithjohn hot-water system, which, installed in your front parlor as an ornament, will keep your seven-room house warm for twenty-four hours with one shovelful of coal; or the Acme low-pressure steam heater, which can be run by a six-year-old child and is guaranteed to be 30 per cent. cheaper in fuel than any other steam-heating system? Then there are the gas radiators, and the indirect-direct-radio system of the Camouflage Heating Co. (Messrs. Freezum and Robem), which provides for heating your dinner-plates on the dining-room radiator and drying your wet galoshes over the parlor register while regulating itself accurately to 68° in all rooms in all weathers. And yet people—educated people, people even of moderate means—will insist on risking the burning-up of their houses, and on burdening themselves with endless trouble, by building and maintaining open fireplaces!

II

It is a chilly October day. The nearly leafless trees are waving and sighing in the east wind, and a cold drizzle has soaked the landscape under a gray and lowering sky. Mr. Commuter has just returned from town. He deposits his dripping umbrella in the stand, hangs his bedraggled overcoat on the rack, and, after returning Mrs. C.'s osculatory greetings, is advised to take off his wet shoes. He obeys and starts in stocking-feet to set them on the dining room register. Alas! the furnace fire has not



FIG. 54. DINING ROOM—HOUSE OF LAWRENCE M. KEELER, WHITINSVILLE, MASS.
Loring & Leland, Architects.

been lighted! "We tried to start a fire this morning," explains Madam C., "but it wouldn't go, except out. I don't know what is the matter with the drafts." The house is cold, and the shoes, accompanied by Mr. and Mrs. C., resort to the kitchen range for warmth. Althea, the African cook, finds the shoes, their owner, his wife and the two children much in the way of the preparations for dinner. Mr. C. flees upstairs to his cold room to change his wet clothing, and returns a half-hour later to dinner, dry but chilled.

After dinner, the kids safely in bed at last, Mr. C. and his spouse are forced to take refuge with their neighbors next door, the clatter of dishwashing and the steaming fragrance of the kitchen failing to attract them. Mr. and Mrs. Neighbor give them a warm welcome, and a sympathetic one, for their steam-heater is out of commission pending the arrival of the much-demanded and overworked plumber; but "fortunately," says Mr. N., "we have plenty of cordwood in the cellar, and our good old fireplace; after all, we couldn't do without it even when the steam is on." Around its crackling blaze the shivering Cs. thaw out, physically and socially, and they resolve not to renew the lease of their hearthless house, which has all the modern improvements but few of the old comforts.

The above is what a little friend of mine would have called "an imagination story," but it is in its fundamentals as true as the truth. There is nothing that can take the place of the open fireplace, particularly of the wood-burning fireplace, with its spacious opening and broad hearth, despite its ashes and its explosive discharges and necessary fender. There are enterprising advertisers who would foist upon us all sorts of substitutes for the antique amenities of domestic life. There is a famous and very "modern" school building, in a mid-western city, in which the landscape, the blue sky and the breezes are carefully excluded by closed windows of ribbed glass, and light admitted only from the north, while elaborate machinery pumps a specified amount of filtered air at a



FIG. 55. LIVING ROOM—HOUSE IN SAN FRANCISCO, CAL.
Willis Polk, Architect.

given temperature into the room. The "advanced" scientific educators of that town have decided that sunshine is bad for the eyes, drafts for the throat, and the view of the landscape for the mental concentration of the pupils. Poor pupils! What artificial ventilation ever could take the place of sunshine and the winds of heaven; what air, sifted and sprinkled and passed through the most scientific coils and whirling fans, can compare with the un-machined, natural breath of the fields and woods and sea, blown by Aeolus or Notus, Boreas or Auster, over grass and flowers, through the balsamic forests or across the measureless prairies, the undiluted drafts from Nature's cup of health and vigor? And what heat, generated over scientific grates and transmitted through coils of steam-pipes, can ever take the place of the genial warmth of a glowing, crackling fire on the hearth of an open fireplace?

The open fire on the hearth is more than a heat-producer; more even than a generous ventilator: it is a social benefactor, a promoter of domestic felicity, the central feature and altar of a sacred rite, an emblem of all that is holy in the human spirit and affections. Heat without visible flame is heat with half its value gone; it warms the limbs, but not the heart. Away with substitutes; let us leave all the science of the *Ersatz* to the Boches: fake tobacco, fake bread, fake leather, fake cloth, fake treaties and fake victories! We must, of course, in our climate and under our present civilization, resort to furnaces or stoves for the steady and systematic raising of our winter temperatures from 0° out-of-doors to 68° within the house; but we cannot forswear that puissant and genial ally of domestic comfort, the fireplace. Pile on the wood—or if it must be so, the coal—and let us gather about the sacred flame, join heart to heart in intimate discourse, or silently watch the pictures which memory and imagination conjure up among the burning coals, while the merry youngsters of the family circle and their friends toast marshmallows or pop corn over the embers, and



FIG. 56. LIVING ROOM—RESIDENCE OF F. E. PAYNE, GLENCOE, ILL.
J. A. Armstrong, Architect.

exchange their youthful quips or their lovers' glances amid the flickering lights and shadows. The house, the cottage, the bungalow, however small, can and should boast at least this one luxury, whatever it may lack of electric lighting and interchangeable furniture and nickel-plated fixtures. .

III.

The fireplace has a long and honorable ancestry; its pedigree is longer than that of the proudest family of Europe. Civilization began with the discovery of the value of flame to man, and its progress can be measured by his control and use of fire. The fireplace traces its history back to the open fire on the central hearth of the Aegean *megaron* — that primitive family room with a roof open in the centre for the ascent of the smoke. The megaron, with its four columns supporting the roof at the angles of the opening, was the germ alike of the Greek temple and of the Roman *atrium*, whose name preserves the tradition of the hearth. It was but an architectural elaboration of the simple scheme of the Indian's wigwam or tepee.

The first step in the evolution of the open fireplace from the central hearth of the megaron seems not to have been taken for over two thousand years. It was the apparently obvious step of providing a collecting-hood or mantel (mantle) over a hearth placed at one side or end of the room, with a chimney to carry off the smoke above the roof. It does not appear that the ancient Romans thought of doing this, though they devised elaborate systems of heating by means of hollow floors of tiles and flues in the walls—the earliest known examples of central heating. It was in the Middle Ages that the mantle-hood, built out from the wall over a hearth at the end of the great hall, first came into general use in Western Europe. It still survives, greatly reduced in size, as a decorative reminiscence in various Renaissance types of chimneypiece, both Italian and French. An American example is shown in the view of the Hall and gallery at Radnor, Penn., on page



FIG. 57. DINING ROOM—HOUSE OF G. B. AGNEW, SOUTH SALEM, N. Y.
William Adams, Architect.

333. The medieval flue was built out from the wall, that is, into the hall; it was of generous section; the hearth was vast, and the mantle-hood of ample proportions. A quarter cord of logs was heaped upon the hearth; forty retainers could sit around the fire, which had to serve for the warming of a great hall in which a hundred or two of warriors or dependents and servitors could gather in stormy wintry weather or when beleaguered by the enemy.

The next step of progress was due to the discovery that a smaller fire, built in a broad and deep niche in the massive wall, and having a hood not more than five or six feet from the ground, burned better, smoked less, and gave out more heat in proportion, than the old-time burning woodpile several feet away from the wall. With the sixteenth century, in France and England and North Italy, the progress of social refinement, demanding for greater privacy the multiplication of family rooms and the separation of the functions of cooking, eating, sleeping and entertainment into different apartments, brought about a corresponding multiplication of fireplaces with their chimneys, and a reduction in their size. The fireplace became more and more a work of art, employing the talent of noted architects and sculptors. The hood gradually disappeared. Through the seventeenth and eighteenth centuries its form and decoration underwent many changes, and it became the most conspicuous architectural feature of the salon and dining-room, in palace and private house alike. But the fireplace itself was unchanged in form or principle; it was always a simple rectangular recess in the wall, with a rectangular flue leading directly from it, unmodified in throat or jamb or proportions by any scientific calculations.

I believe it is not as widely known as it ought to be that the modern fireplace owes such efficiency as it possesses chiefly to two American scientists

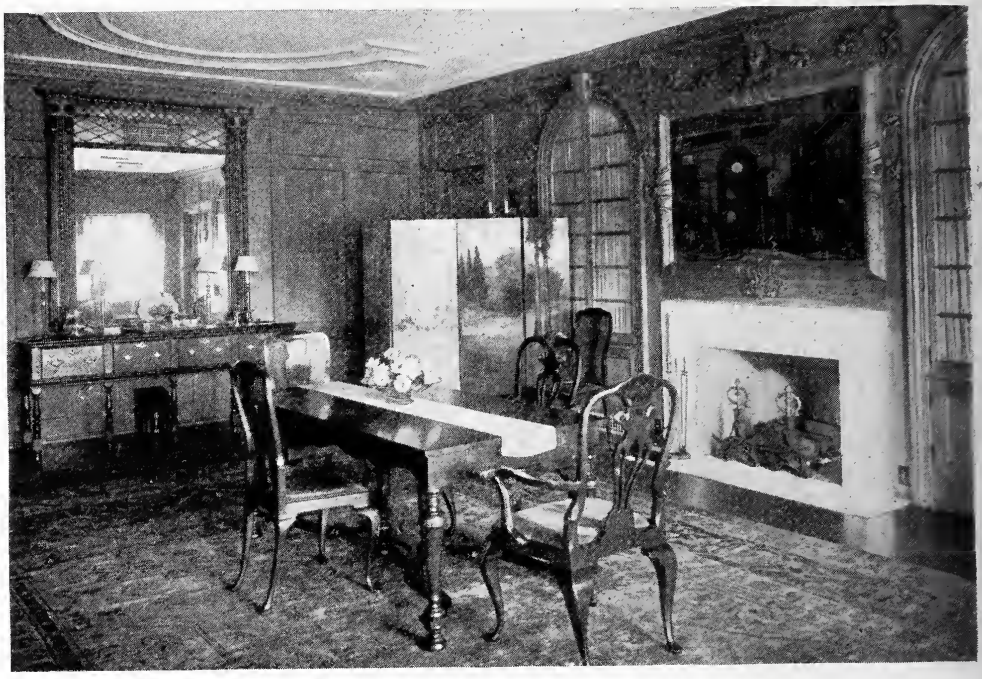


FIG. 58. DINING ROOM—HOUSE OF JOHN BARNES TOWNSEND, RADNOR, PENN.
Wilson Eyre, Architect.

of the late eighteenth century—Count Rumford and Benjamin Franklin. I refer the curious and eager reader to the encyclopedias for accounts of the lives and inventions of the Tory from North Woburn, Mass., and the Republican Philadelphian from Boston. Suffice it for the present occasion to say that it is to them that we owe the splaying of the jambs and the restricted depth of the fireplace, the contraction of the throat and the careful proportioning of the flue-section to the size of the fireplace. The ash-dump and chute came, I believe, from Baltimore—a device worthy of more general adoption. The "Franklin Stove" was, as all know, the invention of the great diplomat, scientist and philosopher whose name it bears; it is the nearest approach to a substitute for the fireplace, and doubtless more economical.

The American fireplace of today is a direct descendant from the fireplace of Colonial times. It is from our Colonial ancestors that we inherit the wooden mantelpiece, of whatever design. The Dutch colonists framed the opening in tiles, and the tiles in wood, and we do the same today. Wooden mantelpieces are rare in Europe, where a more imposing decoration in stone, marble or stucco is traditional; but architects whose hair is gray may remember that in the 'eighties the English architectural journals were wont to carry advertisements of "American wood mantels," which for some years found favor in London and elsewhere in "Queen Anne" and Norman-Shawesque "villas" and houses.

We have happily outgrown what seems to us the callow and groping taste of those days. We have rediscovered our long neglected Colonial inheritances in fireplace design as in other things. How endlessly varied the models they have left us, and yet how almost invariably invested with the charm of spontaneity, simplicity and refinement! Our modern designers have caught the spirit of the older work without slavish adherence to its details. And they have learned what is quite as important, to



FIG. 59. FIREPLACE—RESIDENCE OF LATE GEN. W. J. PALMER, COLORADO SPRINGS, COL.
Frederick J. Sterner, Architect.



FIG. 60. HALL AND GALLERY—HOUSE OF J. B. TOWNSEND, RADNOR, PENN.
Wilson Eyre, Architect.



FIG. 61. LIVING ROOM—HOUSE OF BRYCE METCALF, ARDSLEY, N. Y.
H. P. Green, Architect.

design independently where the Colonial models would be inappropriate, as about a fireplace of field boulders or in a suburban house of French or English feeling in its architecture. Brick and tiles of various colorings and textures are used with notable skill; cut and carved stone take the place of wood in monumental and classic interiors. The plate glass mirror in a Louis XIV or XV or XVI frame of gold, which persists to this day in France as the inevitable traditional over-mantel feature, has seldom found favor with us except for rigidly stylistic "period" rooms, and the horizontal mirror between a lower and an upper shelf, that used to be, as it were, "in stock" twenty-five years ago, has gone the way of the mill-stock over-mantel of black walnut or golden oak of that period, with its spindles and brackets and panels, the last lingering vestige of the Eastlake and Queen Anne crazes of the last generation.

The fireplace is the most characteristic single feature of our American country house interiors, with the possible exception of the staircase. It is a wholly American product, owing but little to European precedent, even in its earlier forms. It is the central and dominant architectural feature of that very American element of the country house, the living room. The Frenchman calls his home his "foyer domestique." For him the family life, the family ties, the family traditions are identified with that "domestic hearth"; and the French family life, into which so few Americans ever penetrate and of which Americans know so little, has been one of the strongest elements in the character-building of that wonderful nation. We too, cherish our family hearthstone as a memory and an idea, even when our restless and changeful life has broken up the family circle. We are much less attached to places and objects than the French; a house seldom remains in the possession of one family for more than two generations. The march of improvement, the inpouring of foreigners, the shifting of



FIG. 62. LIVING ROOM—HOUSE OF R. L. PATTERSON, SOUTHAMPTON, L. I.
Grosvenor Atterbury, Architect.



FIG. 63. FIREPLACE—HOUSE OF W. L. GRANT, PELHAM, N. Y.
H. Major, Architect.

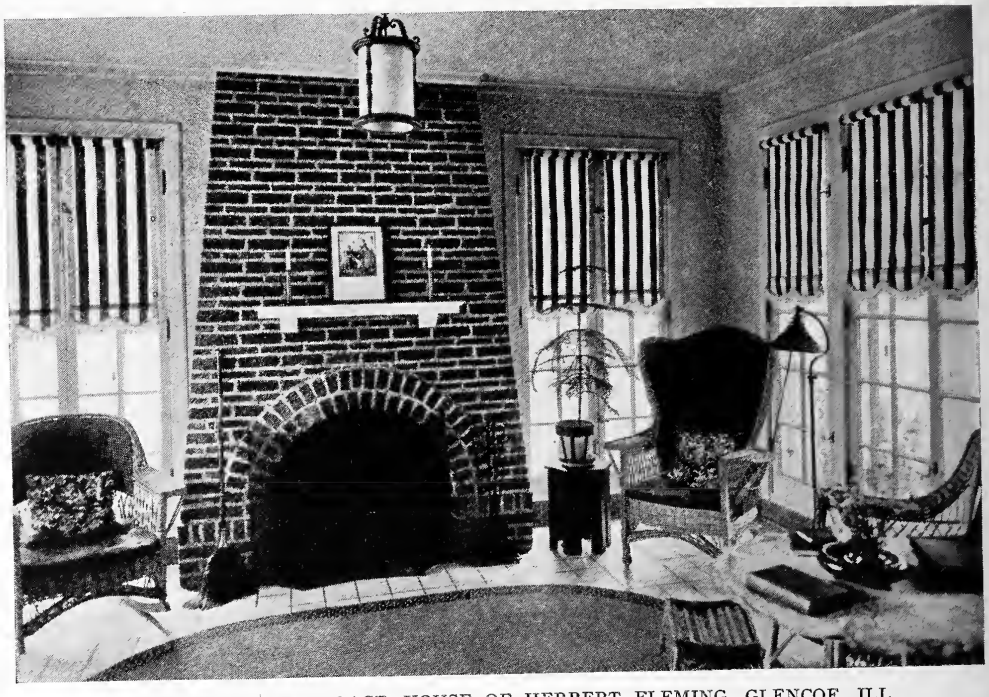


FIG. 64. PORCH FIREPLACE—HOUSE OF HERBERT FLEMING, GLENCOE, ILL.
J. A. Armstrong, Architect.

populations and industries, sweep away the old houses, and we outgrow the primitive simplicity of our grandfathers' dwelling. But the sentiment of the old home often survives all changes, and with maturing years the old memories acquire new potency and charm. It were well if this were more general; if as our land and people grow older we became more attached to the domestic hearthstone, and reunions about the fireplace before which our grandparents spent their wintry slipper-hours and our parents did their sparking became more frequent. All hail the "Old Home Week" and the Thanksgiving and Christmas gatherings of the house-children from afar—and may these soon count among their number the brave men and women from over-seas, returning from their heroic and victorious defense of human liberties and outraged justice! They, at least, will know the preciousness of the home-coming, and the beauty and sacredness of the open fireplace become the altar upon which burns the cherished flame of family devotion and domestic peace. "The dear old family radiator"—No! "I long to sit once more with my dear ones around the parlor hot-air register"—Heaven, preserve us, never! But the fireplace may yet become to the nation the synonym of domestic happiness and a powerful element in promoting that stability, that sense of something permanent and changeless amid the shifts and currents of our national life, which we too much lack and greatly need. Let us, then, with conscientious art, build simple but beautiful fireplaces with ample hearths in every house.

IV

Some Larger Country Houses

WITH regard to the larger country houses illustrated in this issue the Editor has preferred to let the pictures speak for themselves, for the most part, rather than to attempt extended comment and criticism upon them. As in discussing the smaller houses, in those cases in which the architect has accompanied his photograph with notes and explanations, the Editor has either quoted the architect's description, wholly or in part, or drawn from it his own brief account of the house.

The eighteen houses have been arranged upon a somewhat summary classification into "medium-sized" and "larger" houses, the first five (Figs. 65 to 82) forming the group of the "medium-sized," and the remaining thirteen the "larger" group. These first five houses are, in order, two of brick, two of stone, and one of stuccoed construction. The second group has again been arranged or subdivided into the sequence of a Colonial sub-group, and a second group of houses of various styles.

Interiors of several of these houses are given in connection with the essay entitled "Of Fireplaces." The entire series of illustrations shows in general the same variety of material, of style, of finish and of planning, as the houses in the last Country House number of the "Architectural Record" (October, 1917), and the same prevalent qualities of comfort, good taste and absence of eccentricity or striving after novel and startling effects. One can hardly trace changes or progress in architectural design by comparing the work of successive years; the annual stages of advance or change elude detection for the most part. Periods of from five to twenty years alone suffice to reveal the actual movement of the national taste and national art. But the houses shown in this issue, both large and small, seem on the whole to confirm the impression of a growing appreciation by both architects and public, of the value of simplicity as an element of good design. One has only to look at the houses built twenty to thirty years ago, with their tortured efforts at picturesque irregularity, with their multiplied gables, hips, broken slopes, balconies, turrets and "features,"—houses designed with absolute sincerity of purpose, as the Editor can testify, for he was guilty of some of them—to appreciate the distance American house design has traversed since then in the direction of dignified simplicity.

If any one tendency is particularly noticeable, it is the growing popularity of stucco as an exterior finish; a tendency which, particularly strong west of the Rocky Mountains where Spanish and Mission traditions are so strong, has spread over the whole country.

The Editor would have been glad to accompany each of these illustrations with notes, descriptions or comments by their designers. Unfortunately the lateness of date at which some of these photographs were received, the failure of some architects to respond to the request for such memoranda and the dilatoriness of others, all combined to defeat the Editor's virtuous purpose. For only three houses has it been possible to realize this intention.

Residence of C. A. Goding, Nashville, Tenn.

(Illustrations 112 to 115.)

Extracts from letter by Edw. E. Dougherty, the architect (T. W. Gardner, associated).



FIG. 65. HOUSE OF AMBASSADOR THOMAS NELSON PAGE, PINEHURST, N. C.
Loring & Leland, Architects.

"This house is situated in the suburbs on a gently rolling bit of ground with a road frontage of about four hundred and fifty feet and a depth of about six hundred feet. The principal road is on the north side of the lot, so the entrance and rooms of lesser importance were given the northern exposure, while the rooms of major importance enjoy the southern exposure and a broad expanse of lawn and a well developed scheme of informal landscape treatment.

"The exterior walls of this house are a warm light gray stucco laid on brick; the roof is of tile, dull tones of red, brown and gun-metal, lattice and shutters green.

"I regret exceedingly that Nashville does not boast of one photographer capable of producing a presentable interior, and consequently I shall be obliged to deny your request (for interior views).

"The dining room and living room of this house have very attractive black walnut mantels with some very good hand-carving on them, which makes my regret at not having photos of them all the more keen."

House of Major J. C. Wise, Westham, Henrico Co., Virginia.

(Illustrations 106 to 111.)

The following notes have been supplied by the architect, Mr. William Lawrence Bottomley, of New York. The Editor has taken the liberty of abridging portions of them:

"The house is placed on a flat hilltop, the entrance facing north and the living room, porch and garden side facing west and south, getting the best exposure for sun and breezes and overlooking the James River with its pleasant winding valley and distant hills. The entrance side is rather formal; the garden side and garden porch more intimate and friendly in character.

"The house comprises on its first floor a spacious living room, a large dining room with pantry, the stair-hall, kitchen, gardener's room, and servants' porch. On the second story are five bedrooms and a large octagonal library.



FIG. 66. FRONT VIEW—HOUSE OF E. R. MIXER, HARTSDALE, N. Y.
Davis, McGrath & Kiessling, Architects.



FIG. 67. END VIEW—HOUSE OF E. R. MIXER, HARTSDALE, N. Y.
Davis, McGrath & Kiessling, Architects.



FIG. 68. LIVING ROOM—HOUSE OF E. R. MIXER, HARTSDALE, N. Y.
Davis, McGrath & Kiessling, Architects.



FIG. 69. HOUSE OF BRYCE METCALF, ARDSLEY, N. Y.
H. P. Green, Architect.



FIG. 70. DETAIL OF REAR HALL—HOUSE OF E. R. MIXER, HARTSDALE, N. Y.
Davis, McGrath & Kiessling, Architects.



FIG. 71. DRIVE AND ENTRANCE—HOUSE OF E. R. MIXER, HARTSDALE, N. Y.
Davis, McGrath & Kiessling, Architects.



FIG. 72. FRONT AND END VIEW—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect.

"The living room measures 35 by 22 feet, with windows on the south side extending to the floor, those on the two ends being of the usual dimensions. The room is thoroughly symmetrical and balanced in the distribution of its features so that the treatment might be carried out with as much or as little of formality as seemed desirable. The features of the fixed background that obviously afforded decorative opportunities were the fireplace, mantel and chimneypiece; the doorways and windows; the paneling and open bookshelves, along with the color and texture of the walls and, also, the introduction of decorative overdoor and chimneypiece panels; finally, the design, elaboration and placing of the lighting fixtures. The treatment of the wall in panels has a very strong and definite decorative value in itself and this source of interest is greatly augmented by the relief of lines and shadows created by the moldings of the door and window trim, the cornice, the chair rail and the vigorous architectural accent of the mantel and chimneypiece. It is worth noting that, with the exception of the mantel and the chimneypiece setting, which by their boldness assume the dominating emphasis that their central position of importance calls for, all the rest of the moldings are kept down to a low and flat relief. This device serves not only to accentuate the impression of simplicity and spaciousness, but, along with the groups of many parallel lines close together, such as are especially noticeable in the door trims, conveys an aspect of unusual refinement and delicacy.

"The floor of the drawing room is dark in tone, the color of the well-waxed oak floor boards one sees in old English houses. The baseboard is painted black, while the paneled walls and wood trims are a light, dull-finished, oyster shell color, just off a white, thus affording an admirable foil to throw into emphatic relief both the color and contour of any juxtaposed object.

"The keynote, from which the fully elaborated color scheme was worked out, was supplied by a screen (Fig. 110).



FIG. 73. END AND GARDEN VIEW—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect.

This screen has a black ground with a Chinese design in which occur blue, green, Chinese vermilion, a little gold, a white vase with little blue figures and lines on it, and at intervals small human figures with bright red coats. As this screen supplied the basic color inspiration for the rest of the furnishings, which all display one or more notes of correspondence with it, it was also decided to take from it the cue for the coloring in the four overdoor panels and the painting on the chimneypiece. As the illustrations indicate, these paintings are decorative landscapes reminiscent of the eighteenth century Italian style. The overdoor painting in the illustration shows a preponderance of soft blues, blue greens and greens, with an occasional note of red, while the sky in the land and sea picture above the fireplace echoes the blue in the Chinese vase already alluded to on the screen. Of course, the coloring was mellowed and tempered to accord with the present aspect of the old Italian decorative paintings. The other direct reflection of the screen's influence on the fixed decorations is to be seen in the coloring of the lighting fixtures. The sconces flanking the painted panel of the chimneypiece are painted black with touches of gold on them, while the shades are of a brilliant vermilion. The two carved and gilt wood chandeliers of an eighteenth century design, which hang at equal distances from the ends of the room, also display touches of echoing color.

"To complete this room's color elaboration, which, while thoroughly alive with flashes of vivid emphasis, is also full of calm and restful dignity, the full length hangings at the windows are of apple green rep, topped by shaped valances covered with the same varnished Chinese polychrome paper with black ground as was used for the screen. Hangings and valances are set into the trim. Directly opposite the fireplace is a mirror hung above a black lacquer console table. The carpet is a taupe color and the linen with which the most part of the upholstered furniture is covered is of a natural, creamy bisque hue with a strong pattern



FIG. 74. LIVING ROOM AND FIREPLACE—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect.



FIG. 75. DINING ROOM—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect.

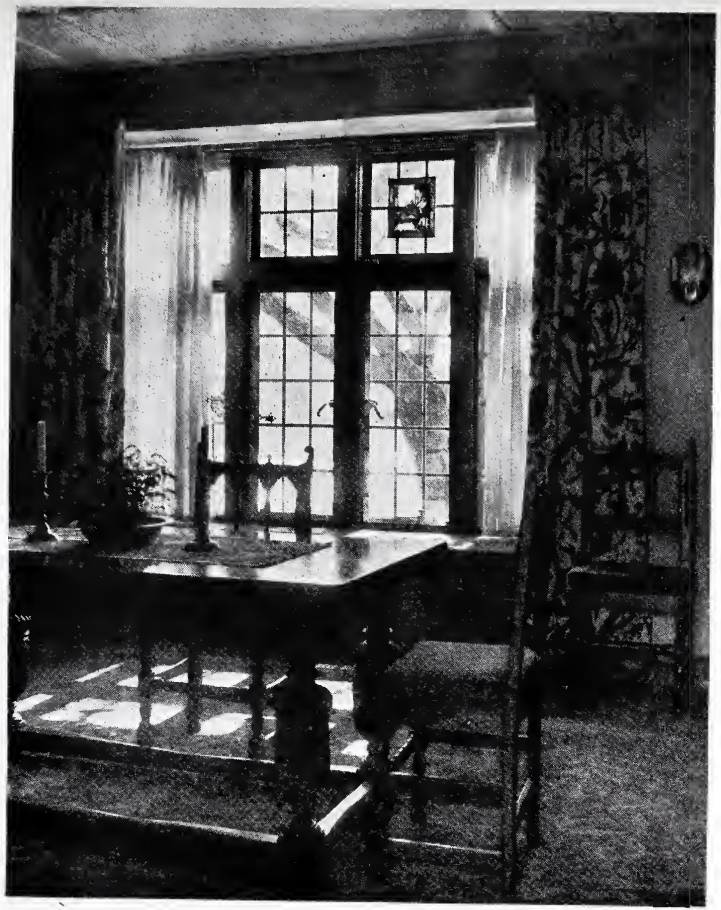


FIG. 76. DINING ROOM WINDOW—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect,

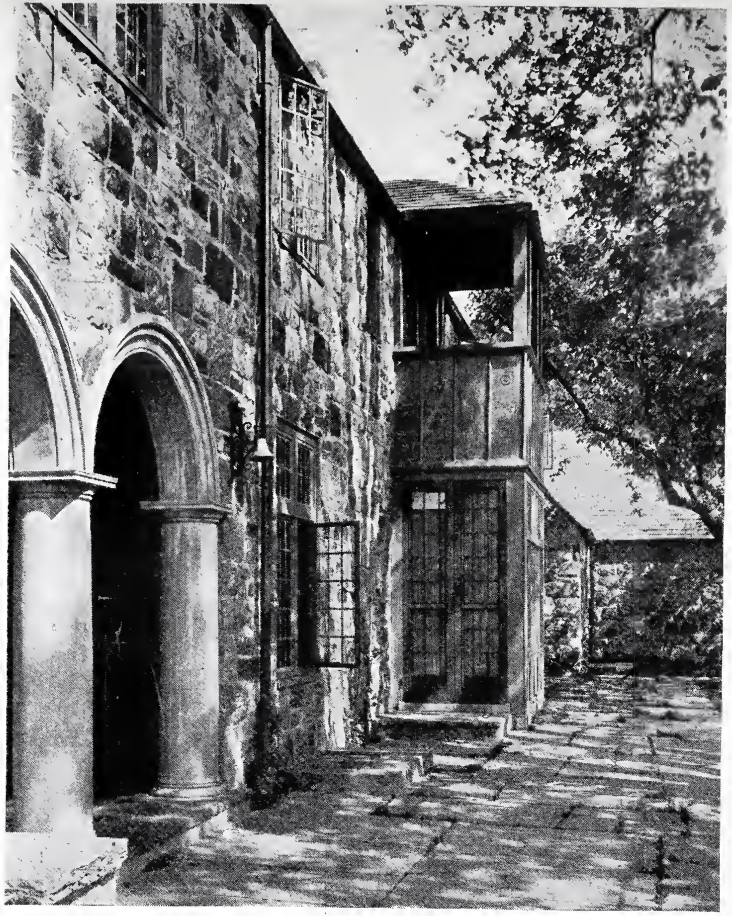


FIG. 77. DETAIL OF REAR—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y.
Alfred Hopkins, Architect.

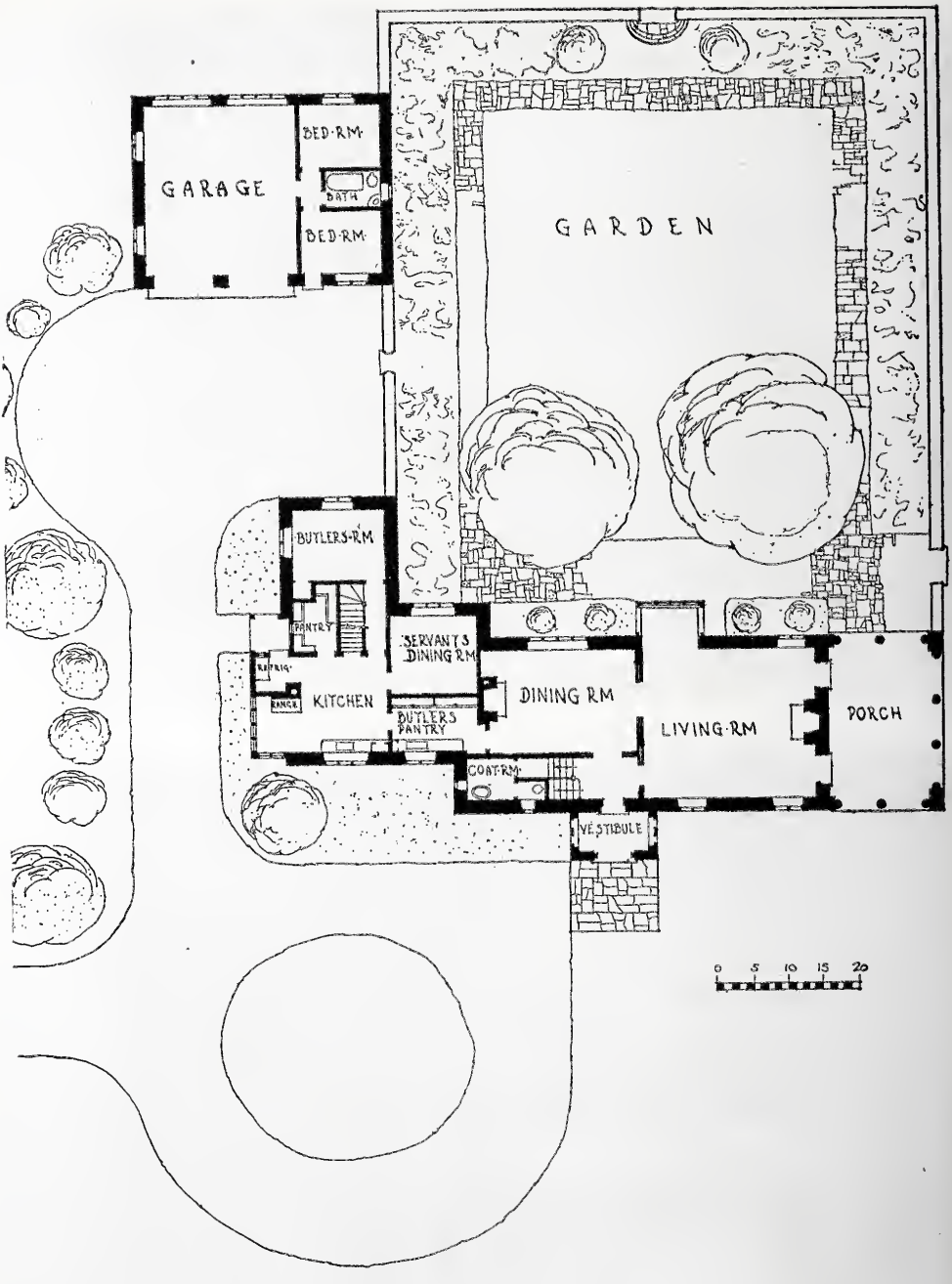


FIG. 78. FIRST FLOOR PLAN—HOUSE OF ARTHUR KAHN, HARTSDALE, N. Y. ALFRED HOPKINS, ARCHITECT.



FIG. 79. EXTERIOR OF LOGGIA—HOUSE OF W. J. BRAINERD, SCARSDALE, N. Y.
E. J. Lang, Architect.



FIG. 80. GENERAL VIEW—HOUSE OF W. J. BRAINERD, SCARSDALE, N. Y.
E. J. Lang, Architect.



FIG. 81. STAIR HALL—HOUSE OF W. J. BRAINERD, SCARSDALE, N. Y.
E. J. Lang, Architect.



FIG. 82. REAR DETAIL WITH BALCONY—HOUSE OF W. J. BRAINERD, SCARSDALE, N. Y.
E. J. Lang, Architect.



FIG. 83. STAIR HALL—HOUSE OF LAWRENCE M. KEELER, WHITINSVILLE, MASS.
Loring & Leland, Architects.

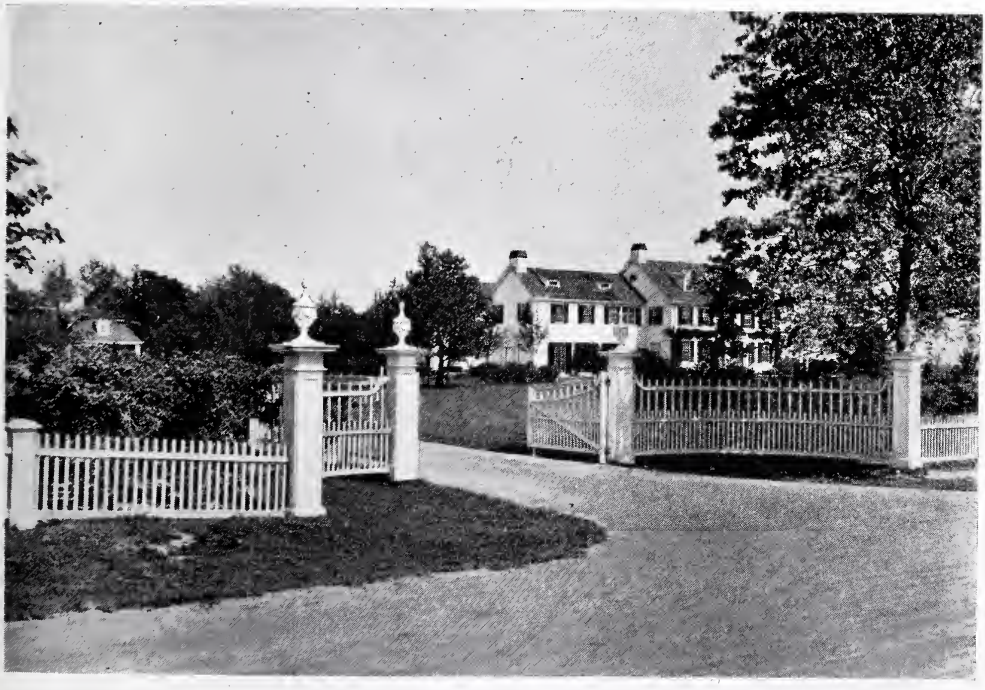


FIG. 84. HOUSE OF LAWRENCE M. KEELER, WHITINSVILLE, MASS.
Loring & Leland, Architects.



FIG. 85. HOUSE OF GEORGE B. AGNEW, ESQ., LEWISBORO, N. Y.
William Adams, Architect.



FIG. 86. HOUSE OF GEORGE B. AGNEW, ESQ., LEWISBORO, N. Y.
William Adams, Architect.



FIG. 87. GARDEN—HOUSE OF GEORGE B. AGNEW, ESQ., LEWISBORO, N. Y. WILLIAM ADAMS, ARCHITECT.

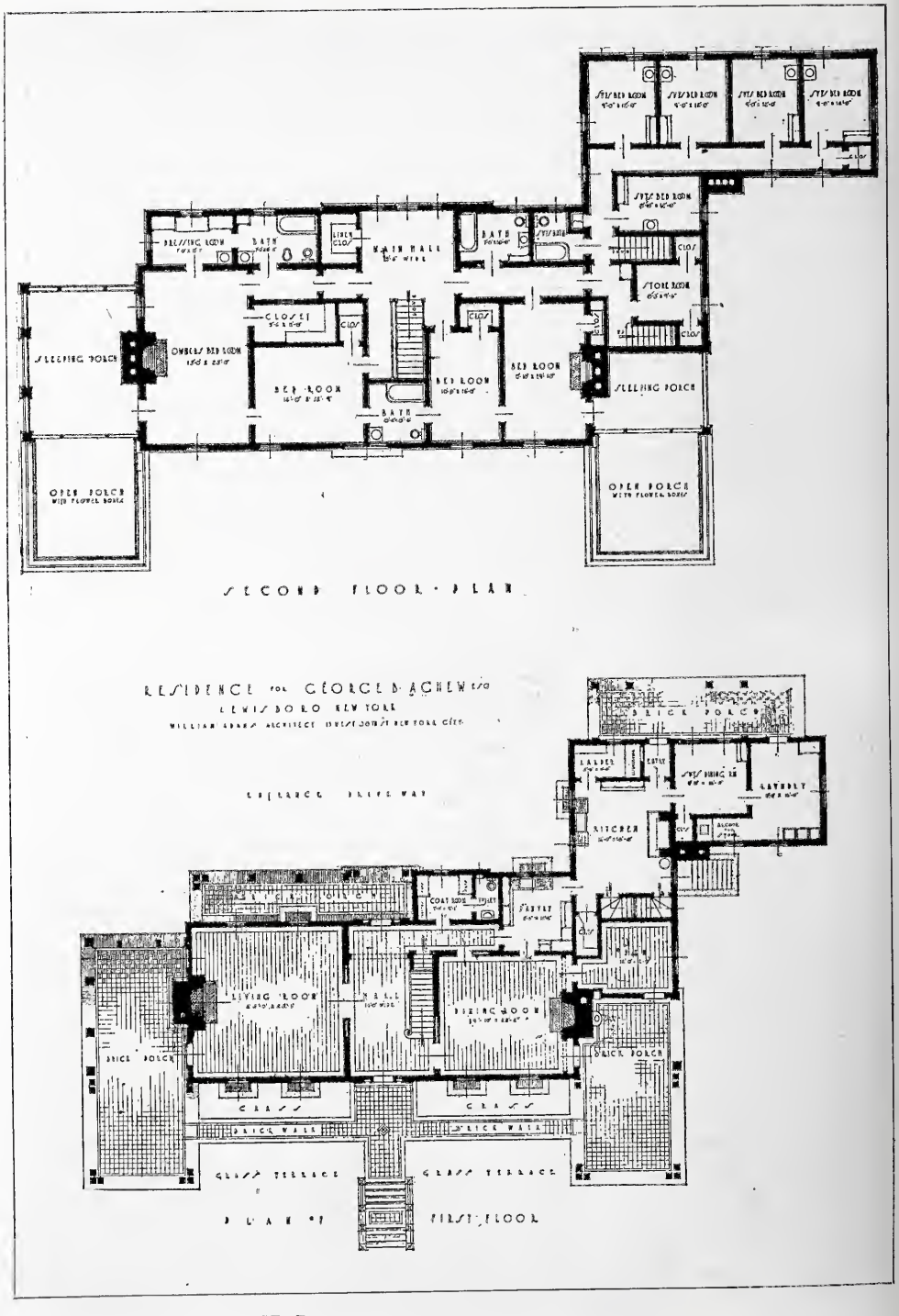


FIG. 88. HOUSE OF GEORGE B. AGNEW, ESQ., LEWISBORO, N. Y. WILLIAM ADAMS, ARCHITECT.



FIG. 89. HOUSE OF ARTHUR N. PECK, ESQ., WOODMERE, L. I.
William Adams, Architect.



FIG. 90. HOUSE OF ARTHUR N. PECK, ESQ., WOODMERE, L. I.
William Adams, Architect.

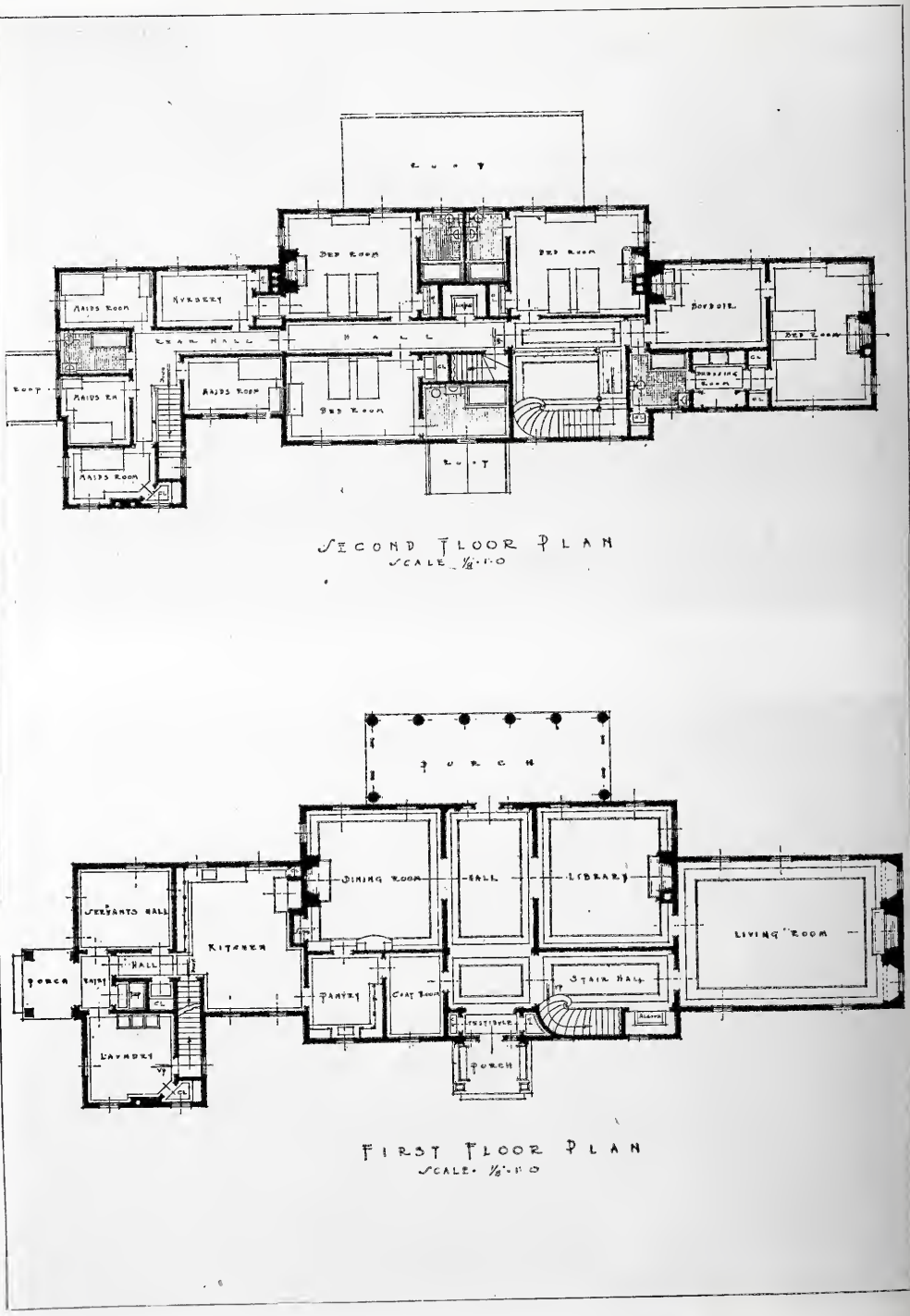


FIG. 91. HOUSE OF ARTHUR N. PECK, ESQ., WOODMERE, L. I. WILLIAM ADAMS, ARCHITECT.



FIG. 92. HOUSE OF EDMUND S. TWINING, ESQ., SOUTHAMPTON, L. I.
William Adams, Architect.



FIG. 93. HOUSE OF EDMUND S. TWINING, ESQ., SOUTHAMPTON, L. I.
William Adams, Architect.

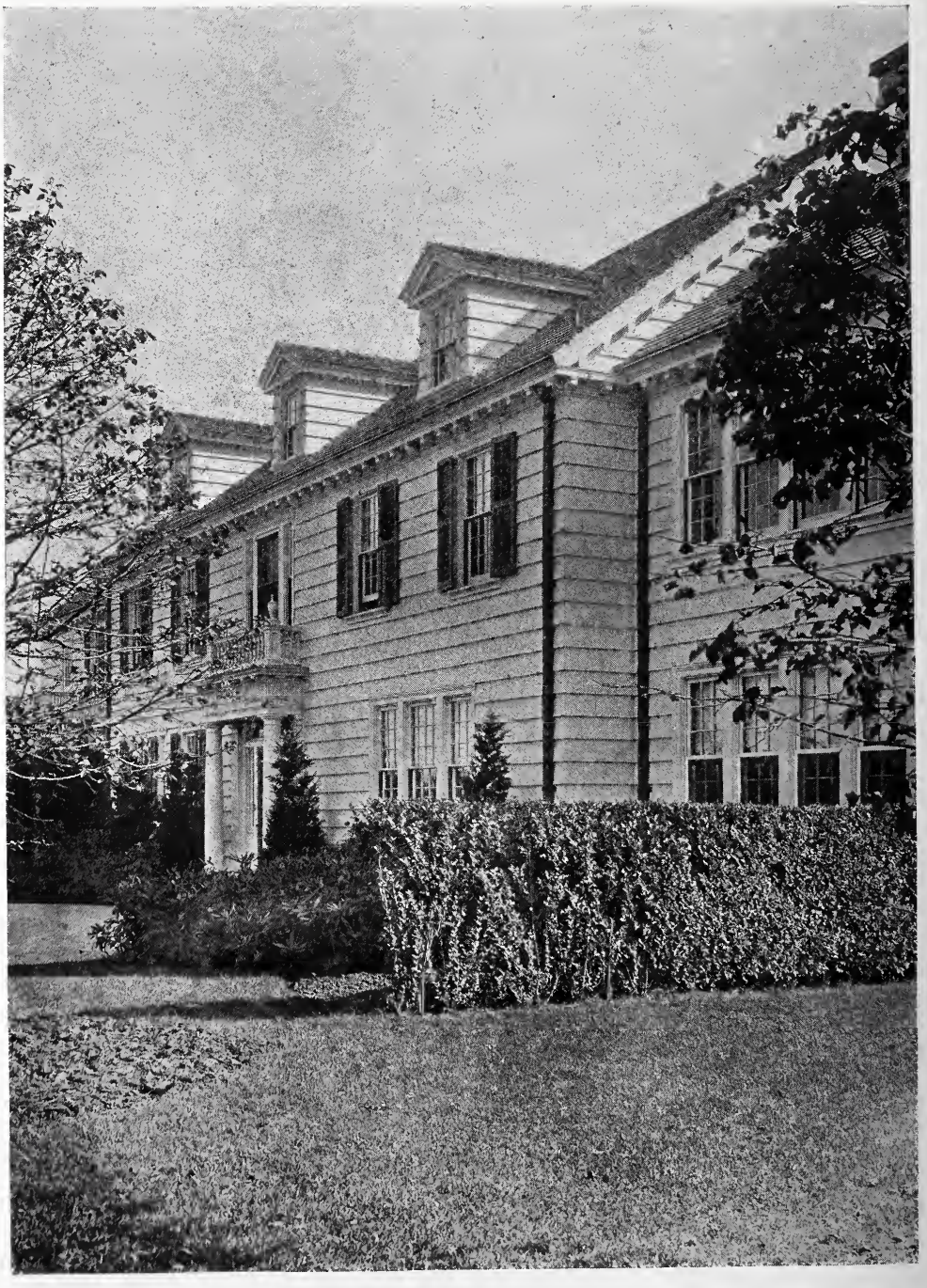


FIG. 94. DETAIL—HOUSE OF EDMUND S. TWINING, ESQ., SOUTHAMPTON, L. I. WILLIAM ADAMS, ARCHITECT.

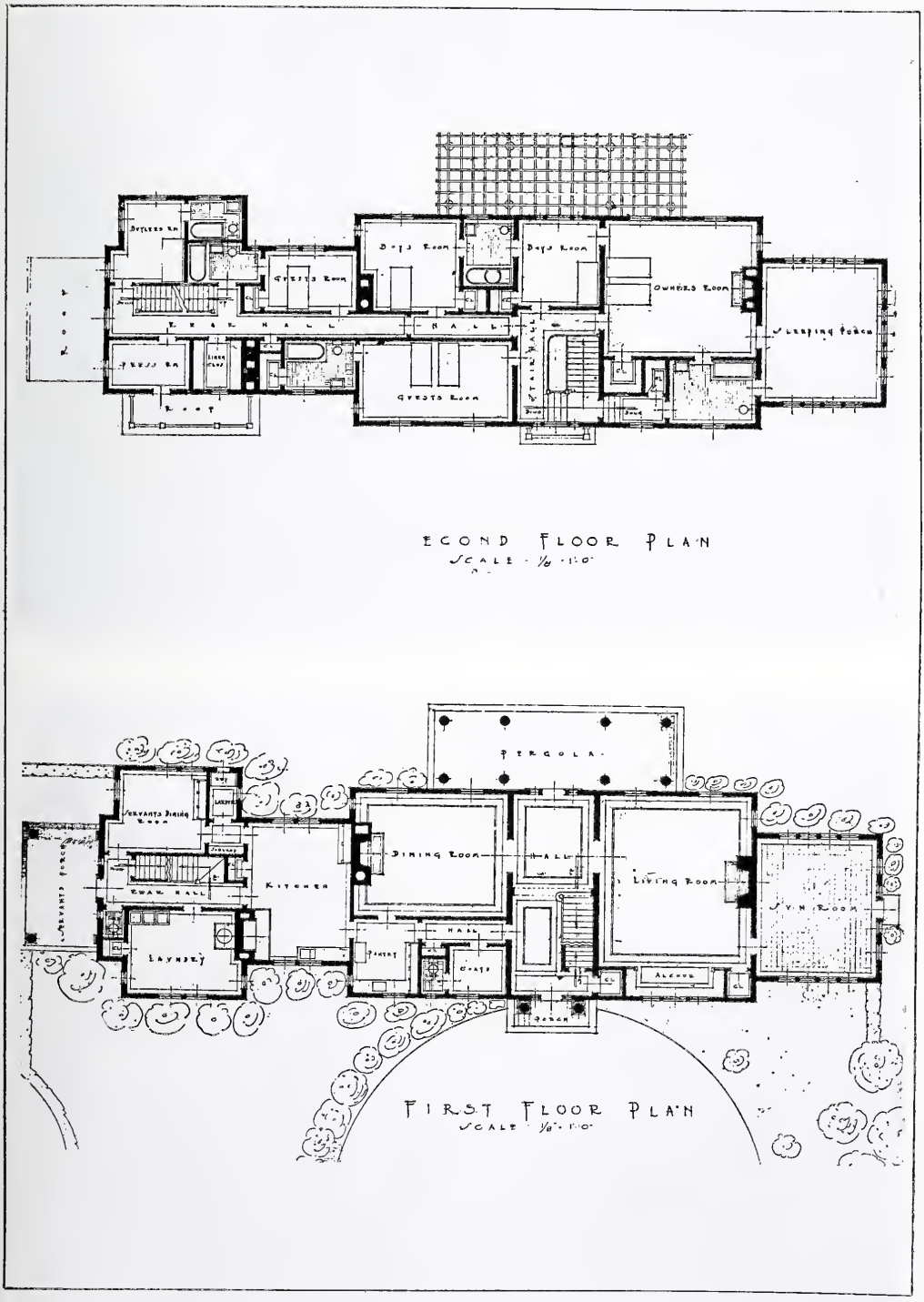


FIG. 95. HOUSE OF EDMUND S. TWINING, ESQ., SOUTHAMPTON, L. I. WILLIAM ADAMS, ARCHITECT.



FIG. 96. REAR VIEW—HOUSE OF C. A. O'DONAHUE, HUNTINGTON, L. I.
Severance & Van Alen, Architects.



FIG. 97. FRONT VIEW—HOUSE OF C. A. O'DONAHUE, HUNTINGTON, L. I.
Severance & Van Alen, Architects.



FIG. 98. HALL—HOUSE OF C. A. O'DONAHUE, HUNTINGTON, L. I.
Severance & Van Alen, Architects.



FIG. 99. PORCH—HOUSE OF C. A. O'DONAHUE, HUNTINGTON, L. I.
Severance & Van Alen, Architects.



FIG. 100. GARDEN FRONT—HOUSE OF A. W. YOUNG, WHITE PLAINS, N. Y.
William Stanwood Phillips, Architect.

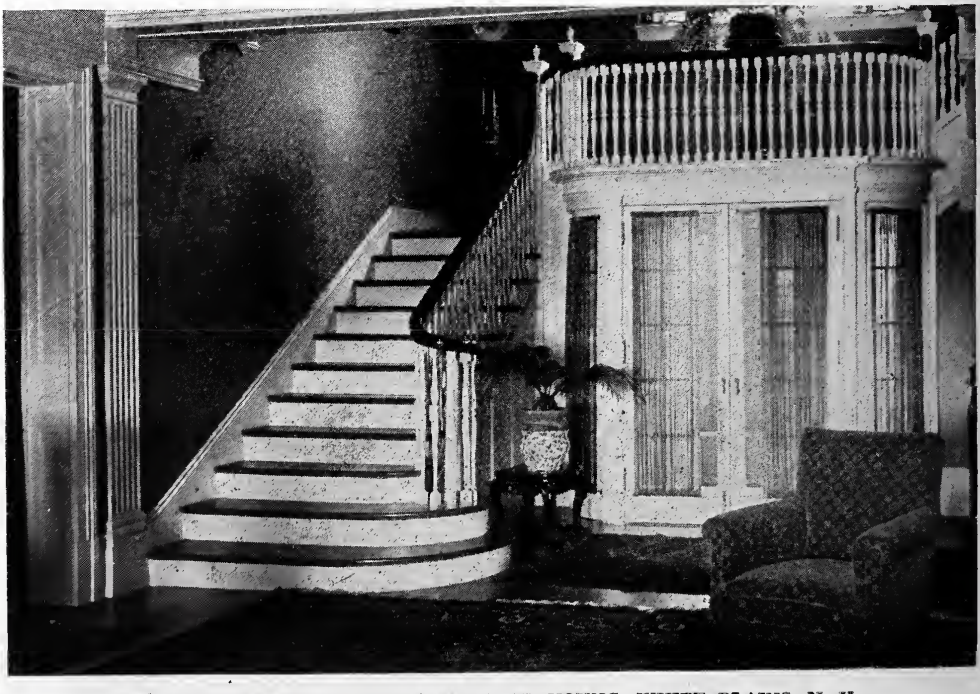


FIG. 101. STAIR HALL—HOUSE OF A. W. YOUNG, WHITE PLAINS, N. Y.
William Stanwood Phillips, Architect.



FIG. 102. GARDEN PORCH—HOUSE OF A. W. YOUNG, WHITE PLAINS, N. Y.
William Stanwood Phillips, Architect.



FIG. 103. ENTRANCE PORCH—HOUSE OF A. W. YOUNG, WHITE PLAINS, N. Y.
William Stanwood Phillips, Architect.



FIG. 104. FRONT VIEW OF BEARD RESIDENCE, GLEN COVE, L. I. H. MAJOR, ARCHITECT.

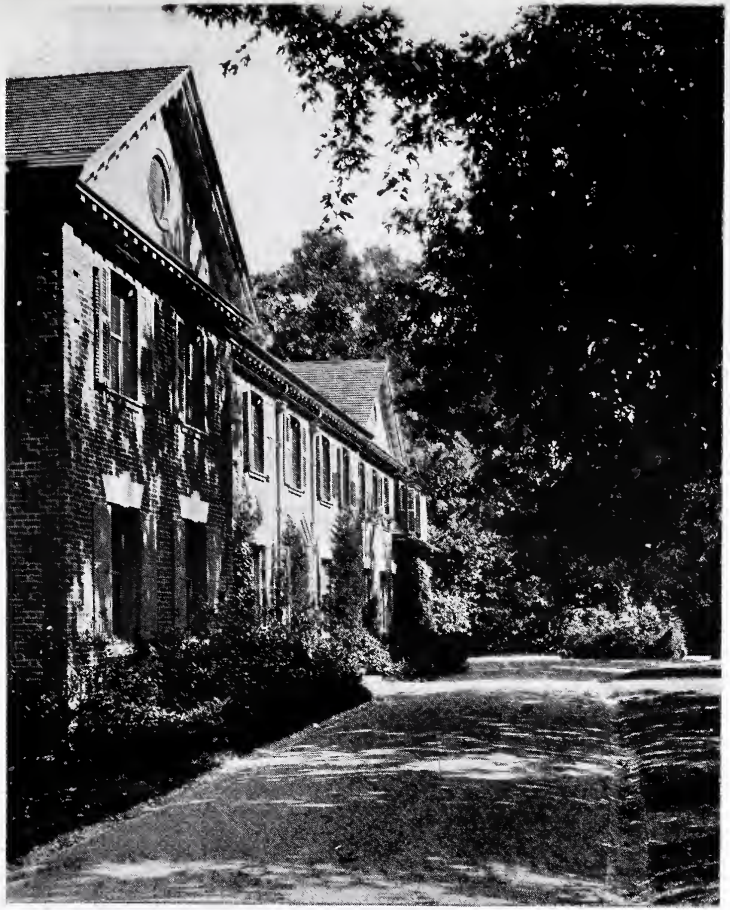


FIG. 105. REAR VIEW OF BEARD RESIDENCE, GLEN COVE, L. I.
H. Major, Architect.



FIG. 106. MAIN FRONT—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA.
W. L. Bottomley, Architect.



FIG. 107. FRONT VIEW—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA.
W. L. Bottomley, Architect.



FIG. 108. END VIEW AND PORCH—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA.
W. L. Bottomley, Architect.



FIG. 109. LIVING ROOM FIREPLACE—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA. W. L. BOTTOMLEY, ARCHITECT.

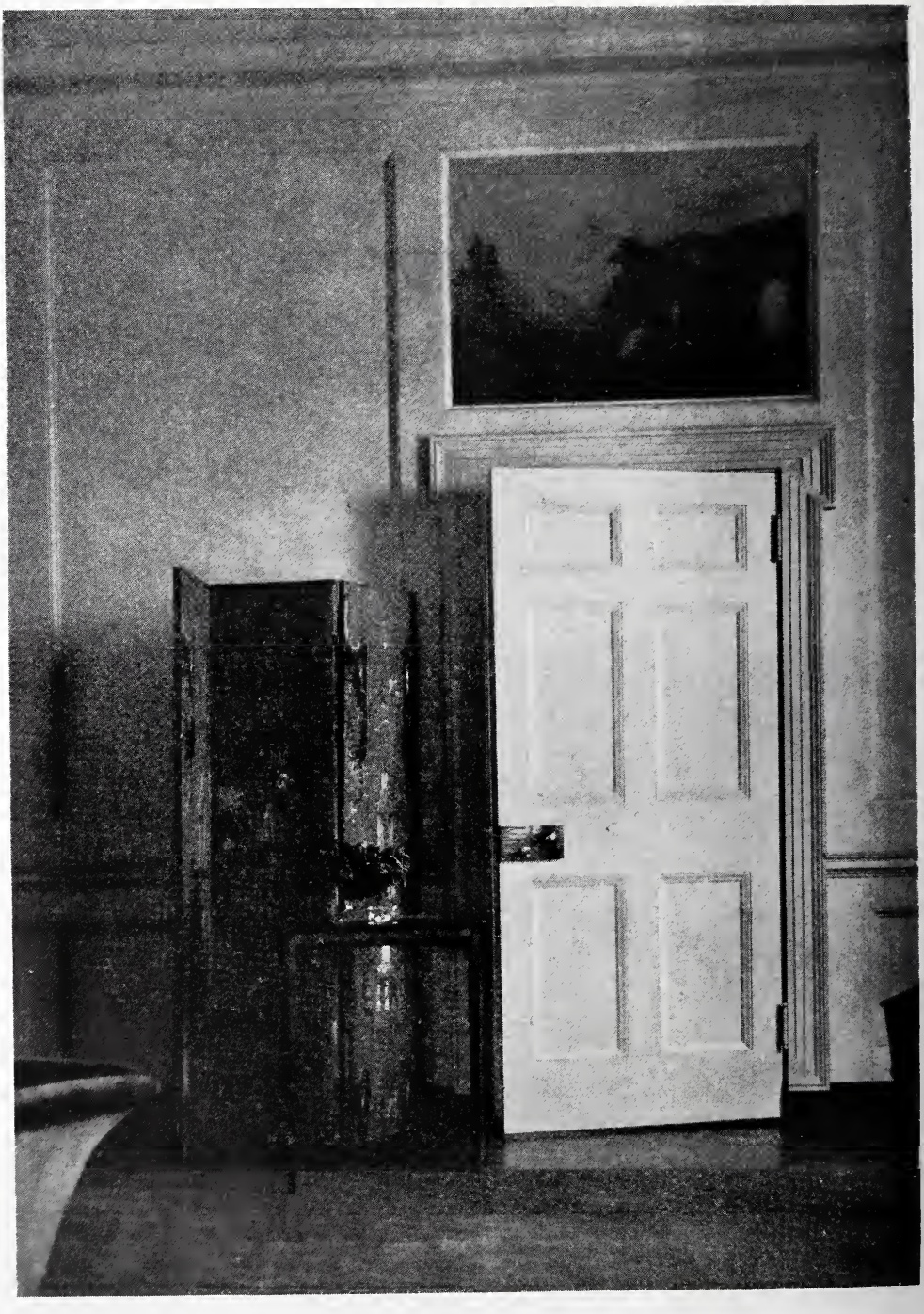


FIG. 110. LIVING ROOM, DETAIL—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA. W. L. BOTTOMLEY, ARCHITECT.



FIG. 111. GARDEN FRONT—HOUSE OF COL. J. C. WISE, WESTHAM, HENRICO CO., VA.
W. L. Bottomley, Architect.



FIG. 112. SOUTH FRONT—HOUSE OF C. A. GODING, NASHVILLE, TENN.
E. E. Dougherty and T. W. Gardner, Architects.

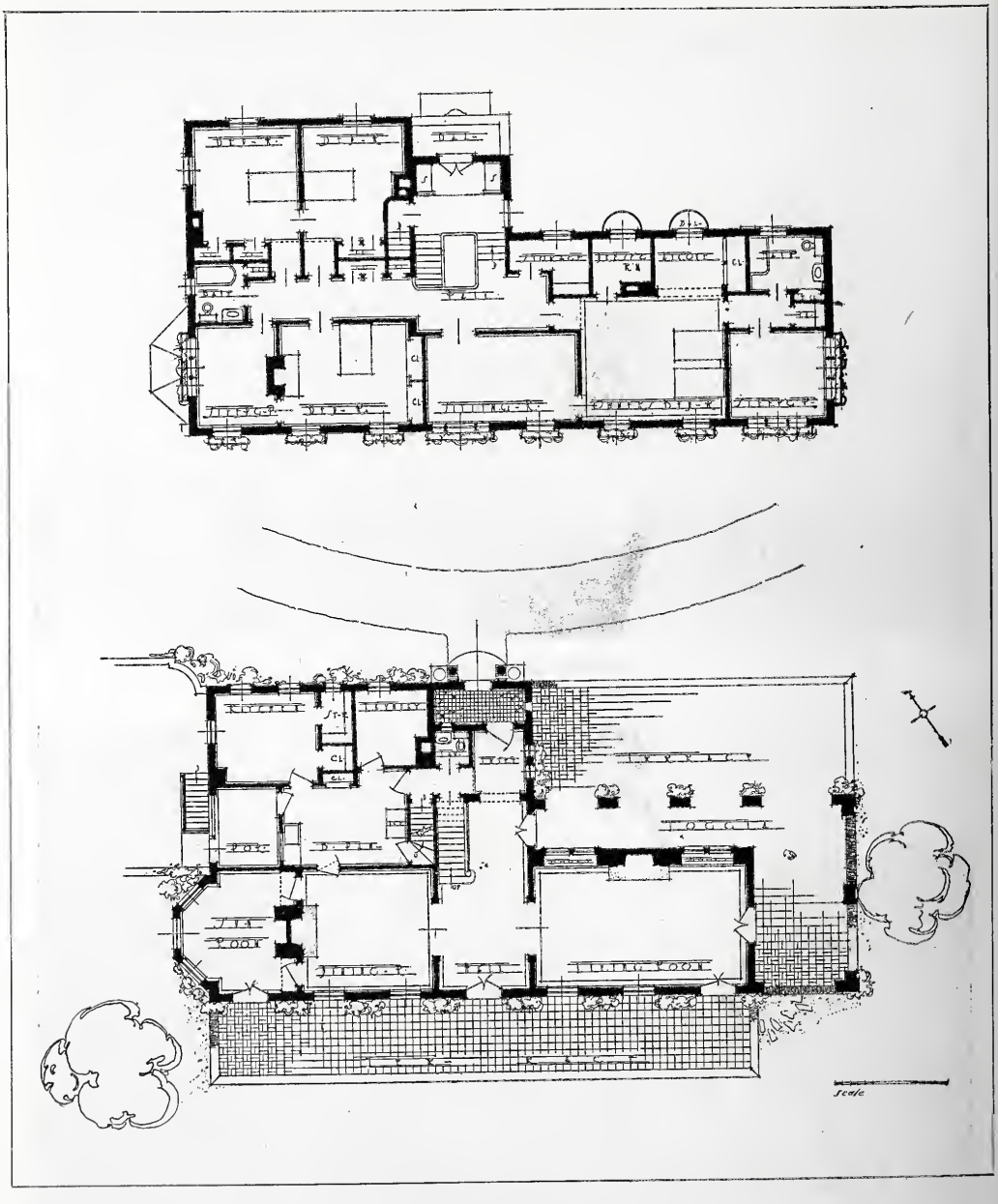


FIG. 113. FIRST AND SECOND FLOOR PLANS—HOUSE OF C. A. GODING, NASHVILLE, TENN. E. E. DOUGHERTY AND T. W. GARDNER, ARCHITECTS.



FIG. 114. NORTH FRONT—HOUSE OF C. A. GODING, NASHVILLE, TENN.
E. E. Dougherty and T. W. Gardner, Architects.



FIG. 115. DETAIL, NORTH FRONT—HOUSE OF C. A. GODING, NASHVILLE, TENN.
E. E. Dougherty and T. W. Gardner, Architects.



FIG. 116. FRONT VIEW—HOUSE OF W. L. GRANT, PELHAM, N. Y.
H. Major, Architect.



FIG. 117. ANOTHER VIEW OF FRONT—HOUSE OF W. L. GRANT, PELHAM, N. Y.
H. Major, Architect.



FIG. 118. REAR VIEW—HOUSE OF W. L. GRANT, PELHAM, N. Y.
H. Major, Architect.

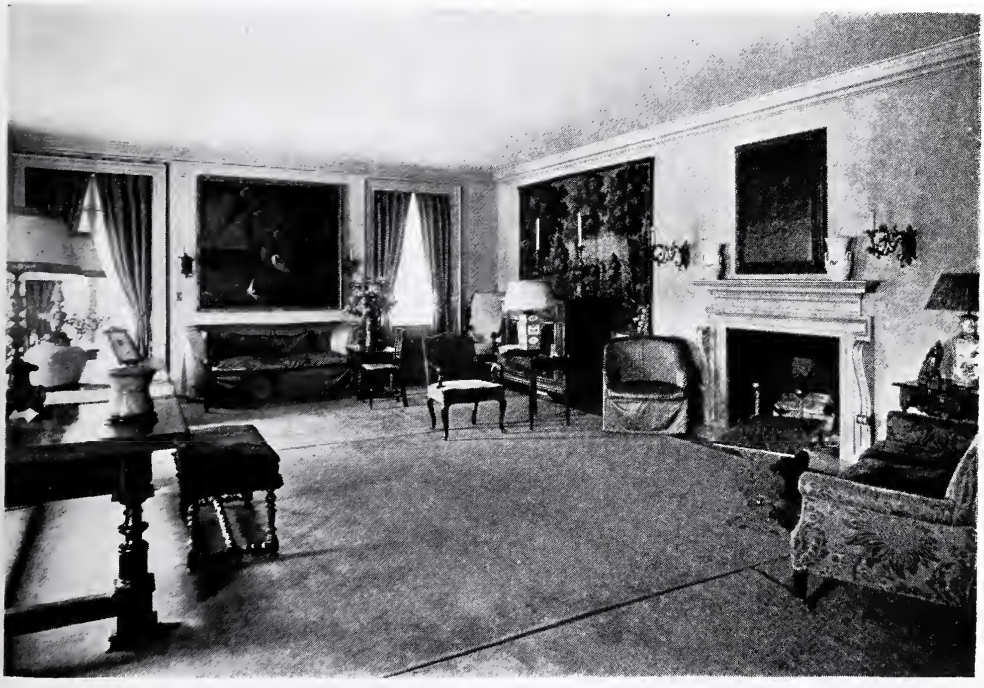


FIG. 119. LIVING ROOM—HOUSE OF W. L. GRANT, PELHAM, N. Y.
H. Major, Architect.



FIG. 120. DINING ROOM—HOUSE OF R. L. PATTERSON, SOUTHAMPTON, L. I.
Grosvenor Atterbury, Architect.



FIG. 121. GARDEN FRONT—HOUSE OF R. L. PATTERSON, SOUTHAMPTON, L. I.
Grosvenor Atterbury, Architect.



FIG. 122. ENTRANCE—HOUSE OF R. L. PATTERSON, SOUTHAMPTON, L. I. GROSVENOR ATTERBURY, ARCHITECT.



FIG. 123. GARDEN FRONT—HOUSE OF T. CROWLEY, GREENWICH, CONN.
James C. Green, Architect.



FIG. 124. END VIEW AND STABLE—HOUSE OF T. CROWLEY, GREENWICH, CONN.
James C. Green, Architect.

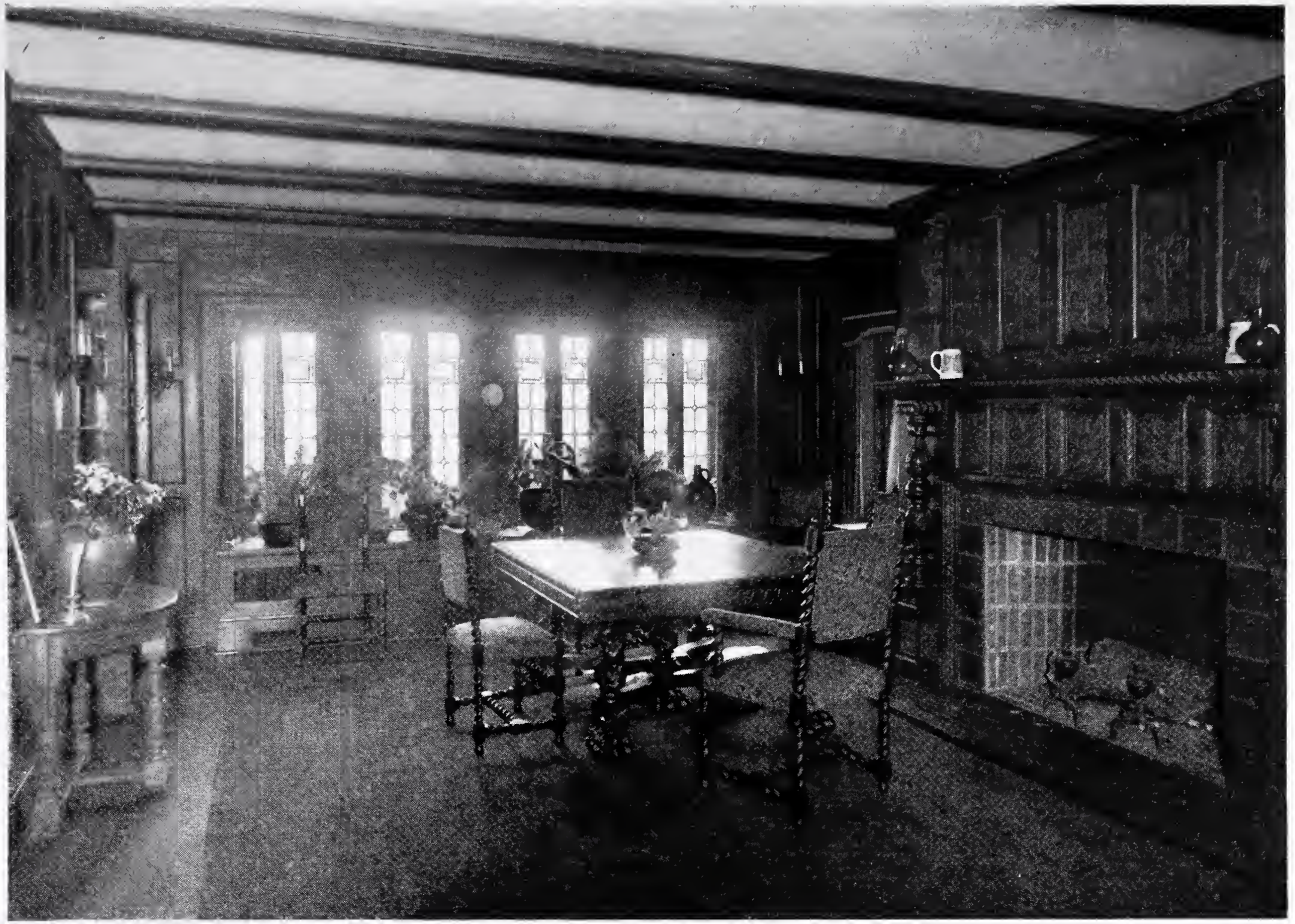


FIG. 125. DINING ROOM—HOUSE OF T. CROWLEY, GREENWICH, CONN. JAS. C. GREEN, ARCHITECT.

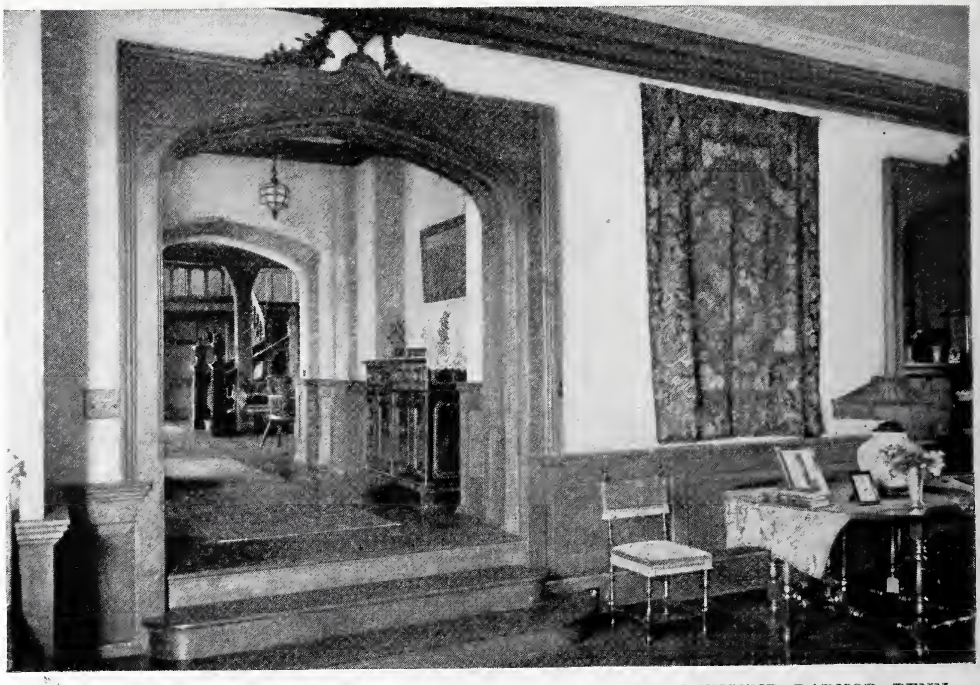


FIG. 126. THE GALLERY FROM LIVING ROOM—HOUSE OF J. B. TOWNSEND, RADNOR, PENN.
Wilson Eyre & McIlvaine, Architects.



FIG. 127. LIVING ROOM—HOUSE OF J. B. TOWNSEND, RADNOR, PENN.
Wilson Eyre & McIlvaine, Architects.



FIG. 128. STAIR HALL—HOUSE OF J. B. TOWNSEND, RADNOR, PENN. WILSON EYRE & McILVAINE, ARCHITECTS.



FIG. 129. DINING ROOM DETAIL—HOUSE OF J. B. TOWNSEND, RADNOR, PENN. WILSON EYRE & McILVAINE, ARCHITECTS.



FIG. 130. ENTRANCE—HOUSE OF J. B. TOWNSEND, RADNOR, PENN.
Wilson Eyre, Architect.

of green and occasional red flowers. The sofa beside the fireplace is covered with a fine ribbed terra-cotta velvet with a slight high light of gold in it. While the cushions are of the same color, they show an agreeable relief of different textures severally produced by covers of velvet, taffeta and satin."

The Townsend House, Radnor, Pa.

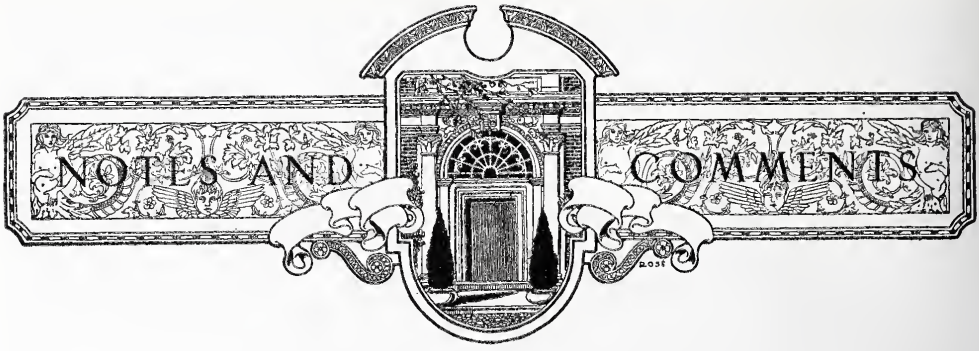
Wilson Eyre and McIlvaine, Architects, Philadelphia.

(Illustrations 126 to 130.)

"The site—being at the top of a hill with a very attractive view to the north and west over the Radnor Valley, and to the south over a small valley with a fair-sized lake in it—presented an interesting problem in the working out of the plans of the house and garden. In order to give the owner the unrestricted use of the three attractive exposures, the house is approached and entered from the east, with a hallway running along the north side to the living room, which occupies the full width of the house at the west end, with an enclosed porch beyond.

"The house is built of local 'Fox Croft' stone, laid as rubblework, with quoins, mullions, copings, etc., of the same stone 'mason dressed,' thus avoiding the necessity of introducing any sharp contrast in color of materials. The roof is of heavy, graduated Vermont slate. Paving around the house is in brick and tile, and a terraced garden extends on the south from the house to the lake.

"The interior finish of the first floor is in oak; the stairway is of heavy hand-wrought material, all except the dining room being a weather color, finished in wax. The dining room is paneled to the ceiling. This woodwork was first fumed, then treated with a white filler, thoroughly rubbed and covered with numerous applications of thin wax. The rooms in the second story are finished in white paint."



Small Window Panes.

How many times you have heard the criticism: "Oh, I don't like small panes, because they are so hard to wash!" Would it be possible to discuss the question of small window panes even from a practical point of view? In the first place, the sash is stronger; secondly, the panes, if broken, are replaced with much less expense; then, as to the question of window washing, why is it that the window panes are the most attractive part of an artist's sketch of an old building? Is it not because he sees in the window the points of light left in the centre of the small panes by the slight rubbing they have gotten in years until they look like bull's-eye panes, hardly more than circles in the centre of the dust and cobweb-covered muntins?

These lights are so picturesque that it is surprising someone has not designed windows to get the same effect. There is, indeed, a slight resemblance to the leaded glass bull's-eye windows that one finds in old English work. The panes, if they are sufficiently small, sparkle in the sun like the facets of a diamond. The small divisions are correct in scale for domestic architecture and give a sense of enclosure to the interior that is not gained by large openings, and as for plate glass windows, almost daily care is needed to make them presentable.

To go back again to the old cobwebbed boat shop. Think of the number of times the boat builder rubbed his hands on the window panes in order to see through, until finally every window had a circle of light. Since this question came up we have made several designs for sash which would correspond to the artist's sketches and the boat shop circular lights, but every effort to make the corners rounding has been met by the sash-builder's criticism: "Oh, that will require a special molding machine and double the cost of the sash." No client has yet appeared who is willing to pay that double cost; for a while we must content ourselves with small muntins and just enough paint in the corners to give a suggestion of roundness there. In the meantime, let us be thankful for small panes which require attention only at house-cleaning time and not a daily polish.

In the old method of manufacture the glass was blown and then cut up without being entirely flattened. This glass was set with the curve showing on the outside. The imperfections gave a prismatic or opalescent effect, so that now people are hunting up old glass to replace the broken panes in restored farmhouses. The last piece cut after the glass blowing was generally thrown away or taken for barn lights or for window panes over doors where it is not necessary to look through. Now there is a demand for these bull's-eye lights, and it is rumored that the manufacturers stick on pieces of glass to imitate the old ones.

In regard to the size of the panes, these are generally seven inches by nine inches in old windows, though six inches by eight inches and eight inches by ten inches are sometimes found.

I took a Western architect to an old house in Wayland, built two hundred years ago. The old panes were almost the only feature that gave distinction to the plain exterior. The house was preserved on account of its antiquity and interest, on land belonging to another house recently built, and we walked in at the front door, as I had often done, to show the house. We found the dining table set and a wood fire burning under the old mantel, just as it might have burned two hundred years ago.

No one was there, but we beat a hasty retreat, and proceeded to measure the windows, when we were discovered and shown the rest of the house. Even in late October it was warmed by wood fires, and the people have found that the shallow fireplaces with wide angled cheeks throw out the heat more than our modern fireplaces. The window panes were six inches by eight inches, and we noted that for future use. The second story windows were three panes wide and six high; the first story four panes wide and six high. However, after all that has been said in favor of small panes, I often put in large sheets of glass where they can be arranged in windows somewhat subdivided, either in the form of French windows or casements toward a good view, for I think that the use of small window panes is sometimes overdone by architects.

FRANK A. BOURNE.

A Red Cross Village At Pisa.

After the first shock of the Austro-German invasion of Italy the Italian people, practically unaided, cared for the flood of refugees that overflowed into every city behind the lines. But for months American Red Cross cooperation has been growing and extending. Today almost wherever refugees have settled an American Red Cross delegate is at work either directly or through Italian agencies.

This autumn, under the walls of Pisa, the American organization will gather at least two thousand such refugees, so that they may be adequately housed, wholesomely fed and offered opportunities to reshape their broken lives.

Under a plan agreed upon between the American and Italian authorities a settlement is being built from designs by Italian architects, which eventually will be large enough to house 5,000 people. The ground was broken formally on May 1 by the American Red Cross in the presence of the governor of the Province of Pisa, who had requisitioned the land. The site covers thirty acres, upon which will be built scores of cement houses about a central square. A church and a schoolhouse face two sides of the square, and a hospital lies in the outskirts of the settlement. Working women will have a well managed day nursery in which to place their children, and there will be a restaurant where the woman who is a breadwinner can buy cooked foods at minimum prices. The town will have modern sanitary facilities and its layout is to be an object lesson to other communities.

The majority of the citizens of the new village will come from Venice. Mainly they will be women, for every able-bodied man in Italy whose work is not already allotted to him behind the lines is fighting at the front. Many will be home workers by instinct and training. All of the home industries which are special to Venice and traditional there will be transplanted, such as lacemaking, clothmaking, etc.

One of the considerations in the selection of the site was its proximity to a large industrial town. Boys and young women not needed in the home industries will be absorbed into Pisan workshops.

Bordering the village runs the Medician aqueduct, constructed four centuries ago by the rulers of Pisa and still carrying water so pure that a glass of it may stand indefinitely and show no sediment. From this aqueduct the village will draw its water supply.

A Glass-Front Building.

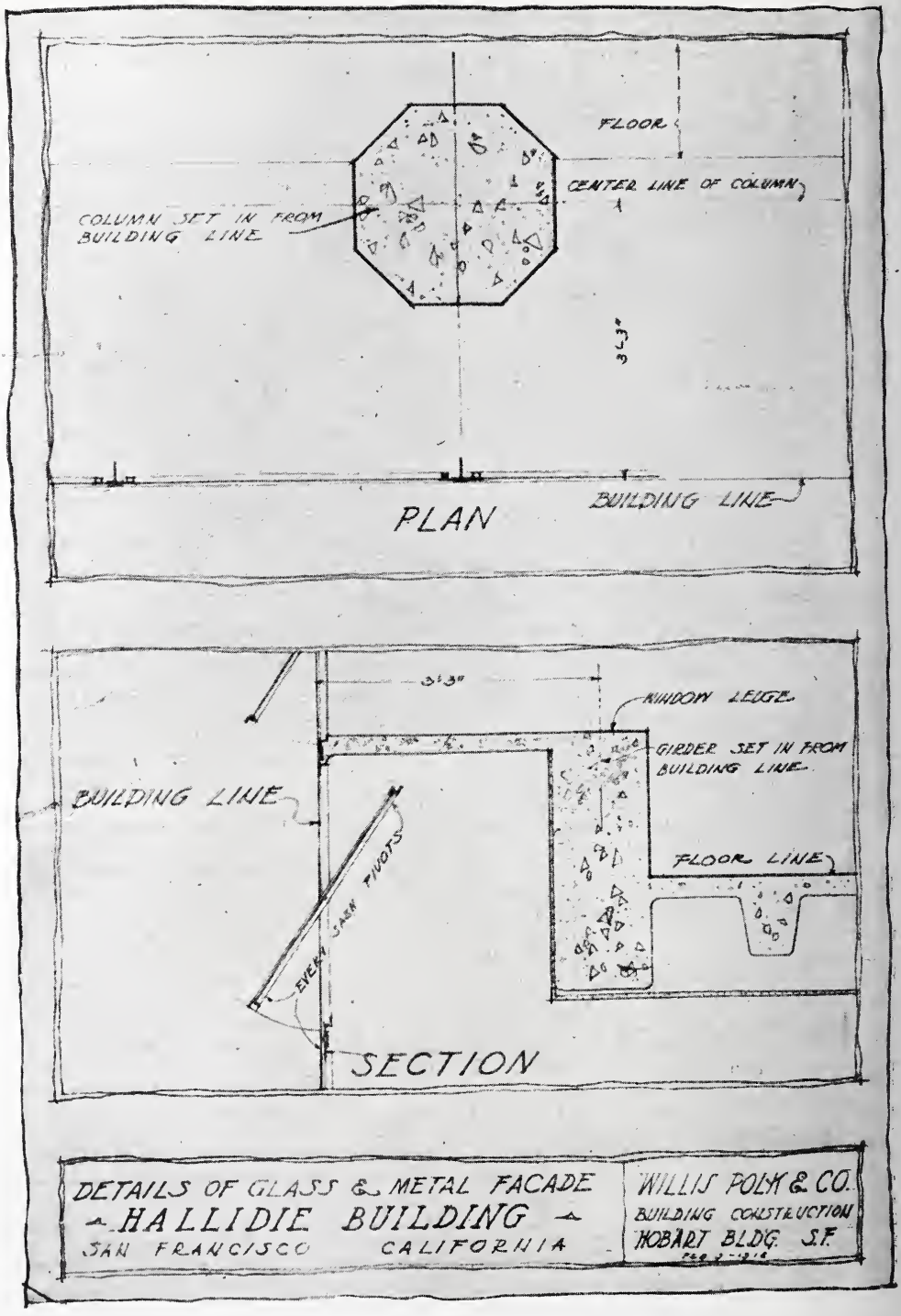
There is in San Francisco a business building which possesses more than ordinary interest to architects. To meet the urgent demand for light this structure has an all-glass façade. It is owned by the University of California, and it seems more than fitting that this departure in construction should bear the name of one of the former Regents of the University, A. S. Hallidie, who was himself an engineer and manufacturer in the California of a quarter of a century ago.

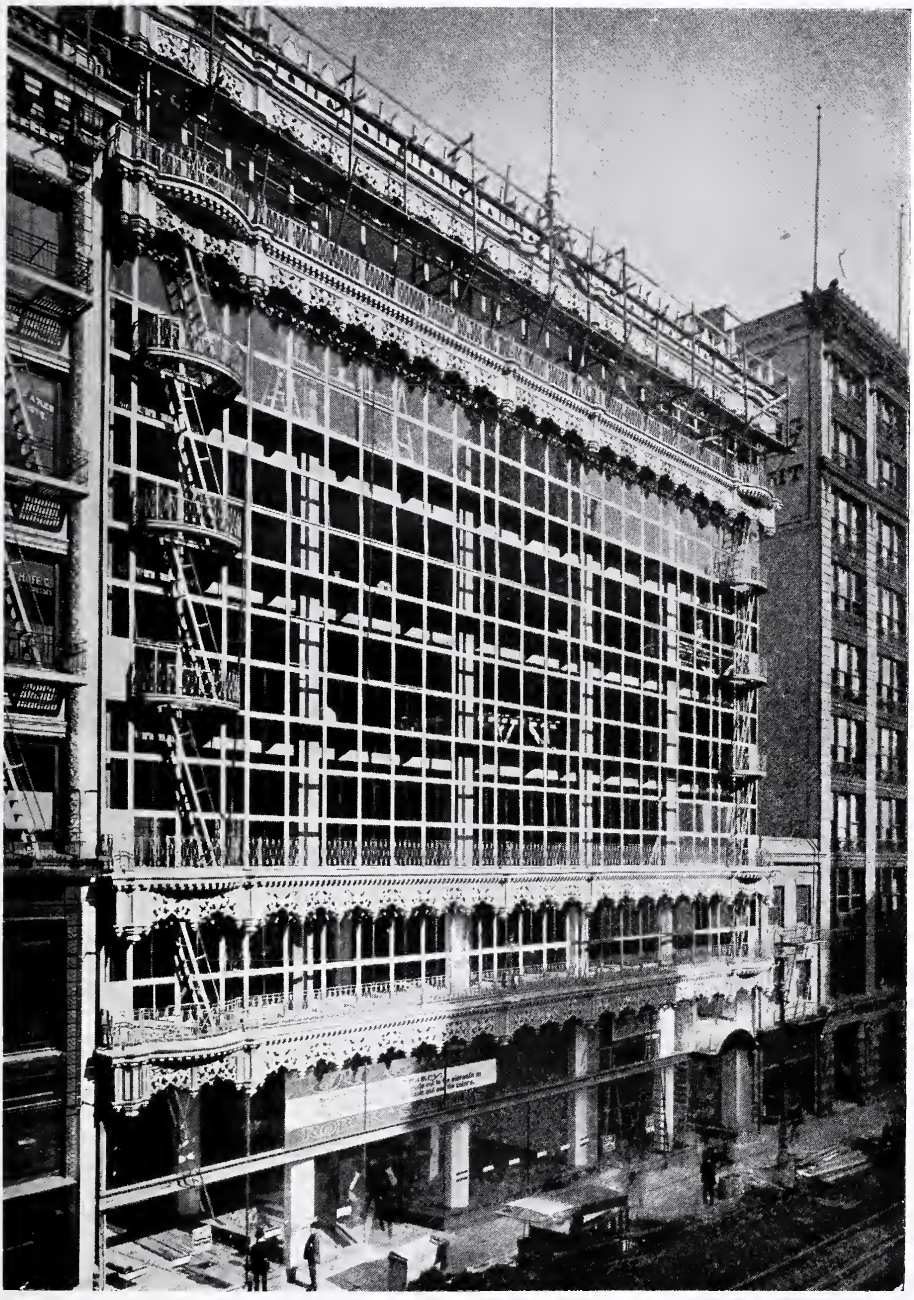
The main innovations in this building which distinguish it from previous efforts are:

First—Practically the entire façade is of glass. The glass area is nearly 100 per cent. The ordinary business building heretofore has had a glass area of from 25 to 50 per cent. on its façades.

Second—In this building the glass front is on the street line, whereas in previous buildings the surface of the glass sets in anywhere from one to two feet from the street line. In this building there is consequently a saving of floor space compared with previous designs where the glass invariably is back of the street line.

Third—In previous buildings, the columns set out and the glass sets in; in this build-


FLOOR
CENTER LINE OF COLUMN
COLUMN SET IN FROM BUILDING LINE
3'-3"
BUILDING LINE
PLAN
3'-3"
WINDOW LEDGE
GIRDER SET IN FROM BUILDING LINE
BUILDING LINE
FLOOR LINE
EVEN SAWN TWOTS
SECTION
DETAILS OF GLASS & METAL FACADE
HALLIDIE BUILDING
SAN FRANCISCO CALIFORNIA
WILLIS POLK & CO.
BUILDING CONSTRUCTION
HOBART BLDG. S.F.



HALLIDIE BUILDING, SAN FRANCISCO.
WILLIS POLK & CO., ARCHITECTS.

ing the glass sets out and the columns set in. The result is not only, as noted above, a saving of floor space, but also an increase of light area.

The additional light secured from width is apparent at first glace. The entire height being glass gives also an added light area not at first obvious. Yet it becomes apparent when you reflect that not only are the columns set back from the street line, but the floor beams as well. Consequently there is no obstruction to light from the floor beams, as in ordinary construction. Ordinarily the floor beams, or so-called spandrel girders, generally extend below the ceiling line, sometimes to a depth of eighteen inches. In this building, instead of obstruction to light below the ceiling line, light actually enters from three to four feet above the ceiling line, greatly adding to the general diffusion of light in the interior.

Willis Polk is the pioneer architect in this construction. The mode of construction of the façade can readily be grasped from the accompanying photograph, taken after the glass had been placed in position on the upper floors of the building, and before it was so placed on the lower floors.

MacDonald W. Scott.

Training Schools for Employment Managers.

The Government has found it necessary to enter the field of education on a large scale. War Emergency Courses in Employment Management, conducted by the Employment Management Division of the War Industries Board, under the auspices of five Governmental Departments, have at present been arranged for in nine universities. The outline of the courses of study was made by Captain Boyd Fisher, who has general supervision of the work.

The courses in employment management are designed to train men or women, who already have a basic experience of at least three years in industrial life and factory methods, and who have come in actual contact with shop problems. Employers of labor, particularly those having war contracts, are urged to suggest men or women from their own organizations as candidates for these courses. With the increasing tightening of the labor situation, it is absolutely essential that large plants have an efficient central employment department. If the Government is to take upon itself the task of furnishing labor when called upon it is necessary that that labor be employed in the proper manner. In other words, each man should be hired to do the thing he is best fitted to do. In these days every man must count and there must be no square pegs in round holes. It has been thoroughly proved that an experienced employment manager, in charge of all hiring and firing, comes very near to solving the labor problem. Therefore it is up to the employer to place his house in order and make the best use of the men with which he is supplied.

Courses have been arranged for at Harvard, in cooperation with the Massachusetts Institute of Technology; Boston University, in Boston; Columbia University, New York; University of Rochester, Rochester, N. Y.; Carnegie Institute of Technology, and the University of Pittsburgh, Pittsburgh, Pa.; University of Washington, Seattle; and the University of California at Berkeley.

There already have been one hundred and seventy-two graduates from the classes conducted thus far. Most of these have returned to their own plants and placed in operation a department of employment. In each case where a central employment department is in vogue, there is never a thought of returning to the old-fashioned hit or miss method of hiring men.

The courses of instruction in the various schools run from six weeks to two months, and the classes are conducted by the foremost authorities in the country on the various subjects covered.

The course of study deals chiefly with the problems of employment management. Brief consideration is given, however, to statistics, labor economics and business organization and management. There are no charges for the course, except the outlay for living expenses of students and about fifteen dollars for books and supplies. It has been arranged to begin new classes as soon as each previous class is graduated, so application for admission to the courses in any of the above-named schools may be made at any time.

Employers of labor having candidates for admission to the classes and individual applicants will be furnished with necessary information concerning qualifications for admission and other data regarding the courses by addressing Captain Boyd Fisher, 77 Thirteenth Street, N. W., Washington, D. C.

Edward D. Jones,

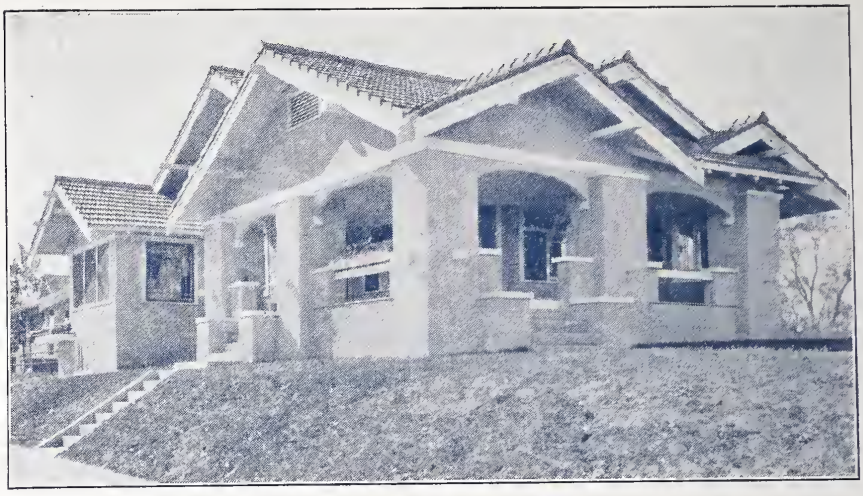
Professor of Commerce and Industry, University of Michigan.

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THE ARCHITECTVRAL RECORD

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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY

THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.



LA TRINITÉ, PARIS—ETCHING
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THE ARCHITECTVRAL RECORD

VOLVME XLIV NVMBER V

NOVEMBER, 1918

BARRACKS GROUP AND HOSPITAL FOR THE U.S. ARMY SCHOOL OF MILITARY AERONAUTICS AT OHIO STATE UNIVERSITY, COLUMBUS, OHIO

JOSEPH N. BRADFORD, ARCHITECT

By HOWARD DWIGHT SMITH

IT is an act of treason against the Government to convey information of a military nature or to give aid and comfort to the enemy; but a discussion of the plan and construction of a small but very interesting barracks and hospital building group at a far inland town, even though published and flung broadcast in Germany itself, could be of no military value to the enemy. As for giving him aid and comfort, it can hardly be imagined that it can be a very comforting thought to Wilhelmstrasse that hardened and seasoned air pilots, observers, aerial machine gunners, mechanicians and balloonists—all highly trained both theoretically and practically—are being graduated from our schools of military aeronautics and commissioned at our flying fields by the thousands. So these remarks on the barracks and hospital of the United States Army School of Military Aeronautics at Ohio State University will serve only the purpose of satisfying what passing or permanent interest there may be in the subject among ourselves.

Whoever is interested in the plans or the elevations or the methods of construction of such a group as we propose here to discuss will be somewhat interested in the conditions which brought about its creation and the circumstances under which it has been built.

The organization of the United States Army School of Military Aeronautics at the Ohio State University, Columbus, Ohio, in August, 1917, was a part of the program outlined by the Aviation Section of the Signal Corps (since reorganized as the Air Service, United States Army) to train men for service as pilots, observers, mechanicians and balloonists. The program called for the establishing of eight so-called ground or theory schools. At these ground schools the first half or theoretical part of the training for the air service is given. Besides

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the school at Ohio State University, other schools were located at the Massachusetts Institute of Technology, Princeton University, Cornell University, Georgia Institute of Technology, the University of Illinois, the University of Texas, and the University of California. The term "ground school" has been quite universally adopted as applying to these institutions or organizations in spite of the fact that it is a little confusing to the lay mind and to the casual reader. The practical part of the training, that which has to do with the actual flying, being separate and distinct from that taught at the theory schools, is conducted at the various aviation grounds or flying fields through the country.

The organization and administration of the ground school at Ohio State University has been in charge of officers of the army, the officer commanding having the rank of major. The instruction has been under the control of an Academic Board, which consists of the military instruction officers and the civilian professors and assistants who make up the instructional staff of the school. The civilian instructors were chosen from the regularly constituted University faculty, those being taken whose regular subjects of instruction were the same as, or similar to, those required in the School of Aeronautics.*

As far as the physical plant is concerned, the School of Military Aeronautics uses the University laboratories, recitation rooms and armory by contract arrangement with the Board of Trustees. One additional large temporary factory-like laboratory has been erected by the State for the use of the Government school. By similar arrangement with the Overseers of Ohio (student) Union the dining room and kitchen facilities of that organization have been used to feed the enlisted men.

Being in the army, however, means, for the enlisted man, military control twenty-four hours of the day. This involved, of course, the providing of sufficient living quarters to accommodate a maximum enrollment of some six hundred cadets. Temporary quarters in the armory were arranged to take care of between three and four hundred. To fulfill their part of the contract the Board of Trustees placed the problem of accommodating the balance in charge of the Department of Architecture and Construction, of which Joseph N. Bradford, the University Architect, is the head.

The plan problem cannot be likened to that of the army cantonments, since the number of men to be housed was small, even infinitesimal, as compared with the larger army problems. The construction problem was similar to that of the army cantonment, inasmuch as speed and economy were governing factors in the prosecution of the work. At Columbus the plan problem consisted in providing sleeping quarters, the necessary sanitary facilities, and space for study and limited facilities for rest and lounging. The problem also included the provision for post headquarters. This particular requirement was involved, because the administration space in the regular University armory was occupied by the Army military organization of the University, since, being a military land grant school, a certain amount of military instruction is required by law to be included in the curriculum.

Following the accepted barracks idea, Professor Bradford has chosen to house the men in long, narrow dormitories, a scheme which allows of maximum light and air. He has used these long, slender dormitory units to form the sides of a simple H plan. The bar of the H is formed by the sanitary unit or latrine building, which is thus as central as it can be located with reference to the barracks units. As a method of study in the arrangement of units, such as these, it is advisable to use separate pieces of cardboard cut out to scale, which can be rearranged and shifted in unlimited combinations, due regard always being

*The prescribed twelve weeks' course in the School of Military Aeronautics includes in general the following subjects:
Theory of flight; engines; care of machines; rigging; machine gun; plane table map making; aero instruments; range and artillery observation; radio signalling; reconnoisance; bombs and bombing; meteorology; war aims; military papers; military tactics and drill.



Photographs by F. H. Haskett.

BIRD'S-EYE VIEW OF BARRACKS GROUP FROM THE SOUTHWEST, SHOWING POST HEADQUARTERS IN FOREGROUND—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

had for air and sunlight and particularly for control of circulation between units.

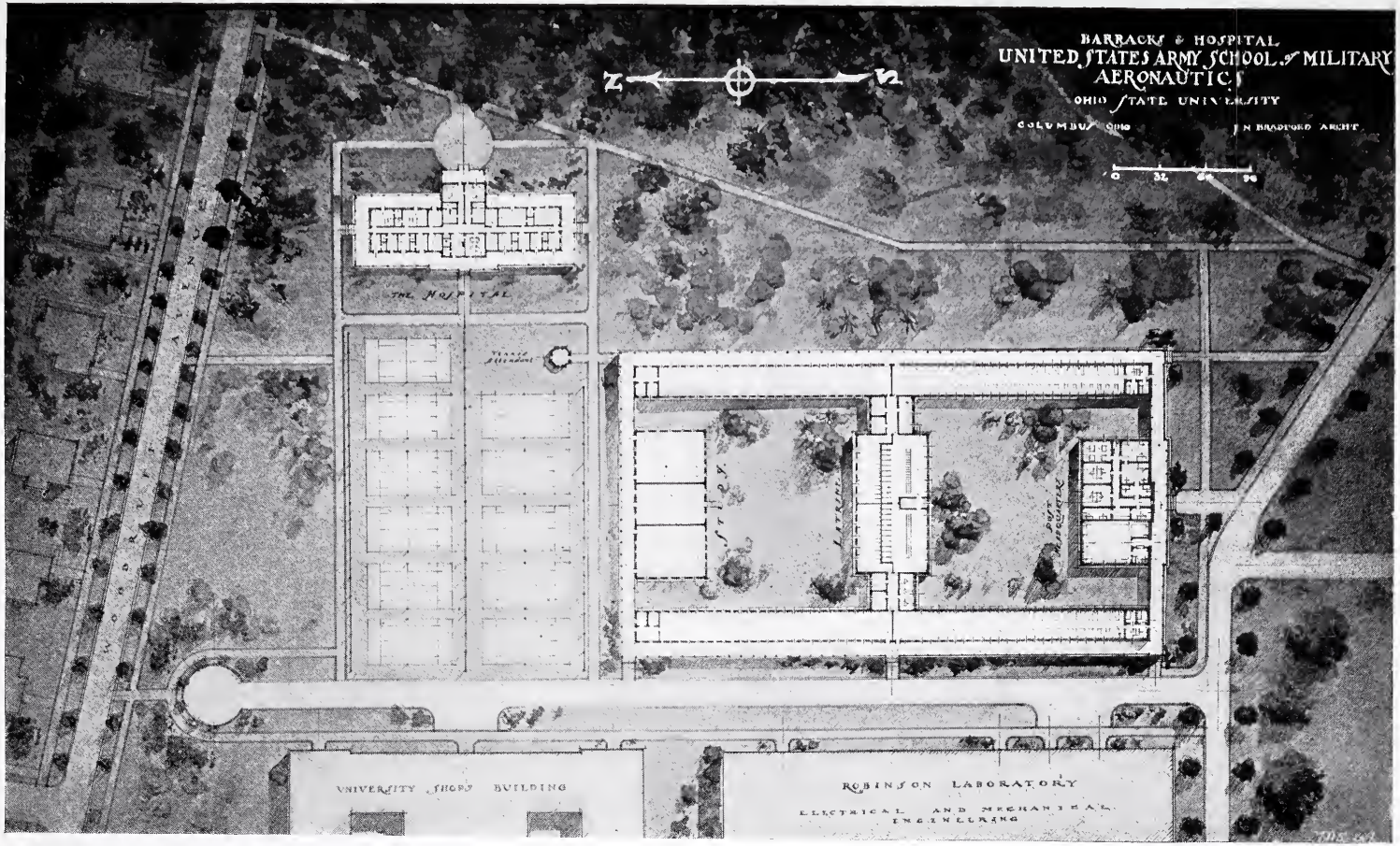
The essential parts of the barracks plan are used to form the H, as has been mentioned. With the two accessory units—the headquarters and the study rooms—Professor Bradford has closed the top and bottom of the H and formed two courts. But he has very easily and successfully unified the whole by a simple porch around the entire rectangle. This porch is not so much a feature of the plan, except as it serves to complete the lines enclosing the two courts. But in elevation and perspective it is the characterizing feature of the whole mass and of its shade and shadow.

First impressions are usually the most lasting. It is not the plan, or necessarily the arrangement of the group, which makes the first impression upon one. Rather, the impression is that here is a very interesting group of buildings, which is congenial looking because of the spaciousness of its porches and one that has a most pleasing color scheme. The temporary nature of the structure has not been made the excuse for leaving the exterior to present the mien of a lumber camp, where the nakedness of the fresh milled boards is only scantily clothed by the descending stains of spike-heads. The color scheme is simple; it hardly need be dignified by the term "color scheme." For, by the simple expedient of painting all woodwork a very warm gray tan, the color scheme has virtually made itself. The long lengths of prepared roofing, spread over the very low pitched roofs in great maroon planes, are just gray enough not to be too strong in color value. The green of summer foliage and the bleak grayness of the deciduous trees in winter do not add to or detract from the effect of these singularly well chosen colors. The fall foliage enhances the effect. The color scheme for the large but effective roof ventilators which break the skyline is the same as that for the roof.

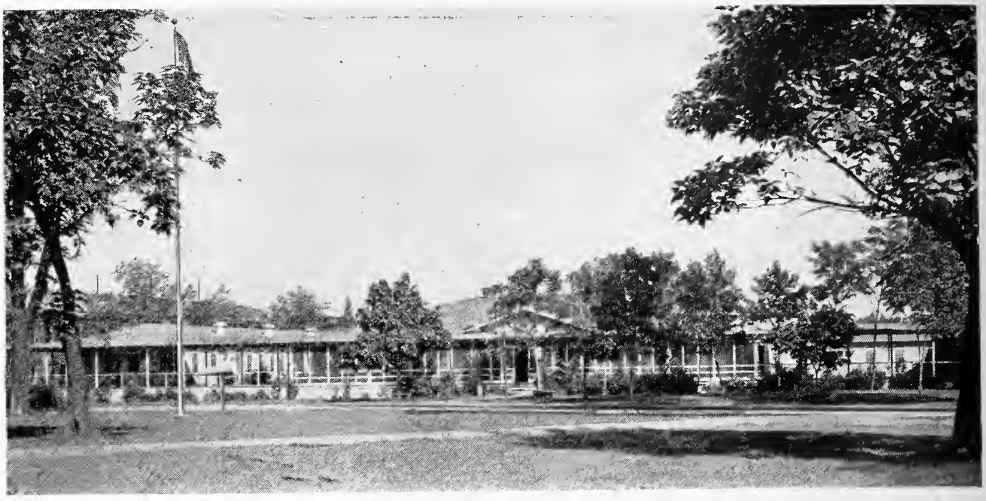
The group, however, has not the appearance of being temporary. In fact, its general appearance of lowness, given by the continuity of roof and eaves lines and the warm color of the walls, somewhat recalls the solid structures of the Southwestern missions. The simile is perhaps exaggerated; but the allusion is assisted by the patio-like appearance of the enclosed courts, which have been planted with shrubs and evergreens.

The post headquarters has been placed in what might be called the top of the H plan, the front end of the group. The porch breaks out very slightly to signify this importance, and the main door is designated by a simple low gable which projects above the porch roof. In plan, this headquarters building consists only of offices for members of the military administration and for the quartermaster's office and property room. A study of the barracks unit shows that it is designed to take a row of cots along either wall with a middle aisle. Each cot has its own window, under normal conditions, with a hinged transom for ventilation. Each barrack dormitory unit has its non-commissioned officers' quarters, which consist of two sleeping rooms and one office. Entrance and exit to each unit is effected by two doors: one at the end leading through the non-coms' office, and leaving only one opening directly from the porch to the dormitory room itself. This arrangement has been found quite advantageous in the maintenance of control and discipline, in spite of the fact that ordinarily it would seem to be good planning to provide more than one exit from a room which houses some fifty men. In case of emergency, however, the windows can be used.

The feeling of completeness and finish, first noticed on the exterior, is given to the barracks units inside by their being finished with "compo-board," the joints covered by moldings, and all kalsomined with water paint. It is not expensive construction. Too few people realize the effect that surroundings have upon studying and growing minds. In normal human beings there is a natural, if unconscious, craving for an appearance of order and symmetry, and finish and completeness. That is why we find our National Army men and guardsmen time after time building little fences of stones



PLAN OF BARRACKS AND HOSPITAL—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



SOUTH FRONT OF BARRACKS GROUP—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

and boulders about their sentry houses and whitewashing them, with the number and designation of their unit applied by way of ornamentation or decoration; and that is why we find them planting flowers and keeping their beds of sod trimmed and smart. The order and symmetry and completeness of one's surroundings have their good effects upon one's morale and mentality. This is a general truth too often overlooked. Too often, for instance, does the development of the physical plant of an educational institution follow an apparent hand-to-mouth program, instead of a prescribed scheme of physical expansion which is manifestly the product of the study of a well-ordered organization. A part, at least, of the educational value of good teaching is neutralized by incoherence of surroundings.

For the purpose of centralized control, just as there is only one door from barracks to porch, so also there is but one door from each barracks unit to the latrine building, where the accommodations are somewhat generous, as military discipline, which requires rising and retiring by clockwork, makes it necessary to have adequate maximum facilities that might not otherwise be required. The short connecting wings between barracks and latrine are used as store rooms, tailor shop and barber shop. The study building corresponds in size and shape to the post headquarters building, and is placed at the north or rear end of the group plan. The study halls are provided with very strong artificial lighting, and are used as libraries and writing rooms as well as for study. Absolute quiet is maintained in these rooms. The canteen between them is devoted to the usual purposes of such an institution, but in emergencies is given over for use as a gun room.

The benefit of a discussion of a group of buildings such as this is twofold. First, it shows how effective a little study can be in making for pleasantness and comfort of surroundings for students in specialized work; and, second, lessons by practical example may be passed on for profit to others in similar circumstances. It is to satisfy most fully this second possibility that it might be well to catalogue here, more or less completely, the general structural features of the group.

Close proximity to the power facilities of the campus obviated the necessity of a low level for extensive heating plant. The building site was practically level, and the foundation plan for all parts except the latrine consists of a field of 12 by 12-inch concrete piers approximately

8 feet on centres and extending down into the ground 30 inches, each resting on a 6-inch tamped cinder cushion. These piers extend just above grade and support short 8 by 8-inch posts, which in turn carry the girders and floor joists. The barracks, headquarters and study floors are 3 feet above grade. The latrine building, which has a cement floor, is only 1 foot above grade and is reached by a cement gradient or ramp in the passage down from the barracks units. This permits the placing of the cement floor directly on cinder fill over the natural grade, making the most economical construction. The difference in level of 2 feet between barracks and latrine, and of 3 feet between barracks floor and outside grade, gives ample assurance, both real and psychological, of freedom from dampness in the barracks floors. Through the enclosed space under the buildings the heat mains have been run uncovered. This gives warmth and dryness and avoids a cold damp floor for the sleeping quarters.

The floor framing is fully indicated on the plans. In general the joists are 2 by 8 inches, the girders are built up of 2 by 8-inch and 2 by 10-inch beams, and are not framed flush. Consideration of shrinkage is not an essential item on account of the absence of plaster work. The floors themselves are of 7/8-inch matched flooring, and in all units except the latrine are covered with brown battleship linoleum. Walls and vertical partitions are framed of 2 by 4-inch rough studs. In the latrine building, where the floors are of cement, the sill for wall studs is raised on a cement covered base. All framing timbers are spaced 2 feet on centres. Spacings in general have been worked out so that grounds for nailing the "compo-boards" would be conveniently furnished without additional framing or trimming. The stock width of "compo-board" is 4 feet, and it comes in 8-foot lengths. All interior walls, except the middle partition in the latrine, are of this "compo-board." The latrine partitions, including the single thickness closet and shower stall partitions, are of 7/8-inch matched and beaded flooring material thoroughly waterproofed. All exterior walls are of ordinary lap or drop siding, put on over heavy waterproof building paper, but no sheathing. Exposed framing, such as porch posts and porch rafters, are of dressed soft pine. This applies also to the interior posts in the latrine and study buildings. The underside of the porch roof sheathing is dressed. Roof framing consists only of rafters 2 feet on centres, held by collar members formed of two 1 by 6-inch pieces, spiked one on either side of each rafter. The



POST HEADQUARTERS, AT SOUTH END OF BARRACKS GROUP—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

ceilings of all rooms are of "compoboard," in as long lengths as possible and with joints covered with moldings as on the walls. In the ceilings of all units there are registers with louvres for ventilation into the air space above, which in turn is ventilated through patent ventilator outlets. In warm weather the current of air created is effective in keeping the ceiling space as cool as possible. With registers and ventilators closed, the dead air space is made as effective as possible in cold weather.

The roofs are all sheathed with ⅞-inch rough boards and covered with prepared roofing material and given color by having finely crushed red slate pressed into the top surface. The weight of the particular material used on these buildings is 80 pounds per square (100 square feet). It is in 4-foot widths and laid in long strips lengthwise of the roofs. The material itself has proven quite satisfactory, but this group of buildings has experienced the same difficulties which have been encountered in a very large percentage of the temporary structures throughout the country where similar roofing methods have been used. Considerable annoyance from leaks at first led to general dissatisfaction with the entire roofing material, till finally it came under careful investigation along with similar conditions in cantonments elsewhere. The results of this investigation, participated in by the manufacturers of the material as well as by others directly interested, showed that the cementing composition used at the joints was not of proper quality, that it became dry and allowed the joints to open. It was surmised that the great demand for the product at the beginning of the war, resulting in the speeding up of its production, had some effect on its quality.

It is now accepted as better practice to use two or three ply felt, mopped on with bituminous products and surfaced with crushed stone, brick or slate, presssed into the top coating. In the application of this top coating, the choice of the material is sufficient to allow of a great number of color schemes, producing quite as satisfactory results as with prepared materials and far more practical as regards weathering qualities.

The plumbing installation is confined to the latrine building, except for a small toilet room in the post headquarters building. The building group is located near enough to a municipal trunk sewer, so that sewage disposal offered no problem. Water is supplied from the same city mains which supply the other forty odd buildings on the University campus. The arrangement of the latrine facilities consists of two separate compartments for the group, each set of two barracks (approximately housing one hundred men) using one compartment in the building. There is therefore available, for each group of about one hundred men, fourteen closets in the toilet room and eleven shower stalls, thirty-six lavatories and four laundry trays. Each fixture in the wash room is supplied with both hot and cold water (showers, lavatories and trays). This hot water is supplied by a heater in the small heater room located between the two wash room compartments. This system has a 1,000-gallon storage tank, which has been found sufficient to supply the entire set of twenty-two showers, seventy-two lavatories and eight laundry trays. Shower heads are of the perforated adjustable type, six inches in diameter; and the water supply to them is controlled by simple, inexpensive, common type of mixing valves. The entire floor of the latrine building is of cement on cinder fill, and is sloped to drains in eight places.

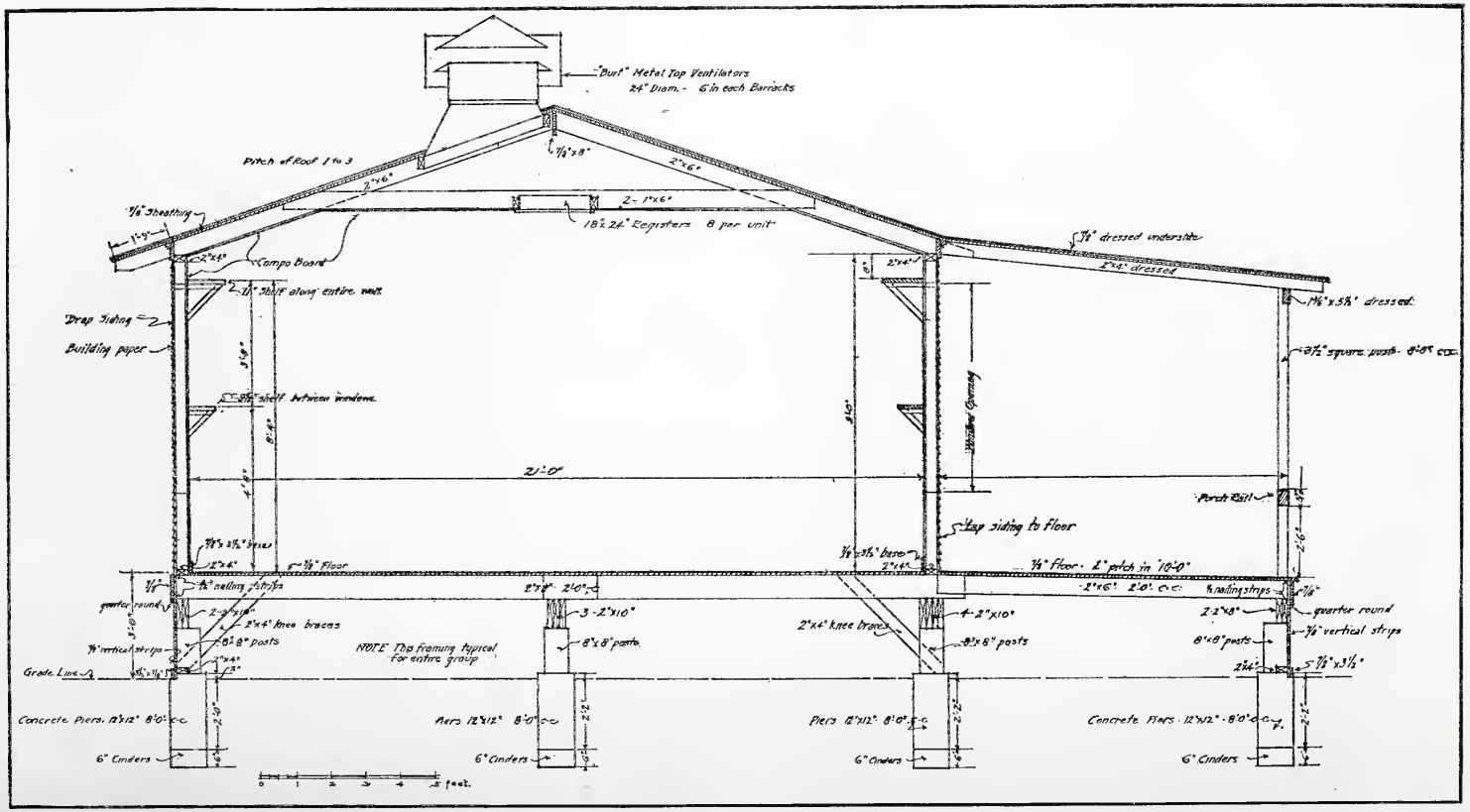
The heating of the entire group is by direct steam radiation. The steam is brought to the group through a main from a University power plant. As has been stated previously, the distributing mains are carried exposed in the open space under the floors of the various units except in the latrine building. This space has not been cemented and the presence of the exposed pipes has been effective in avoiding dampness as well as cold. The radiation in the rooms is furnished by pipe coils, which run continuously under the windows, supplying the quantity called for on the plans. It can be said that the heating system was effective



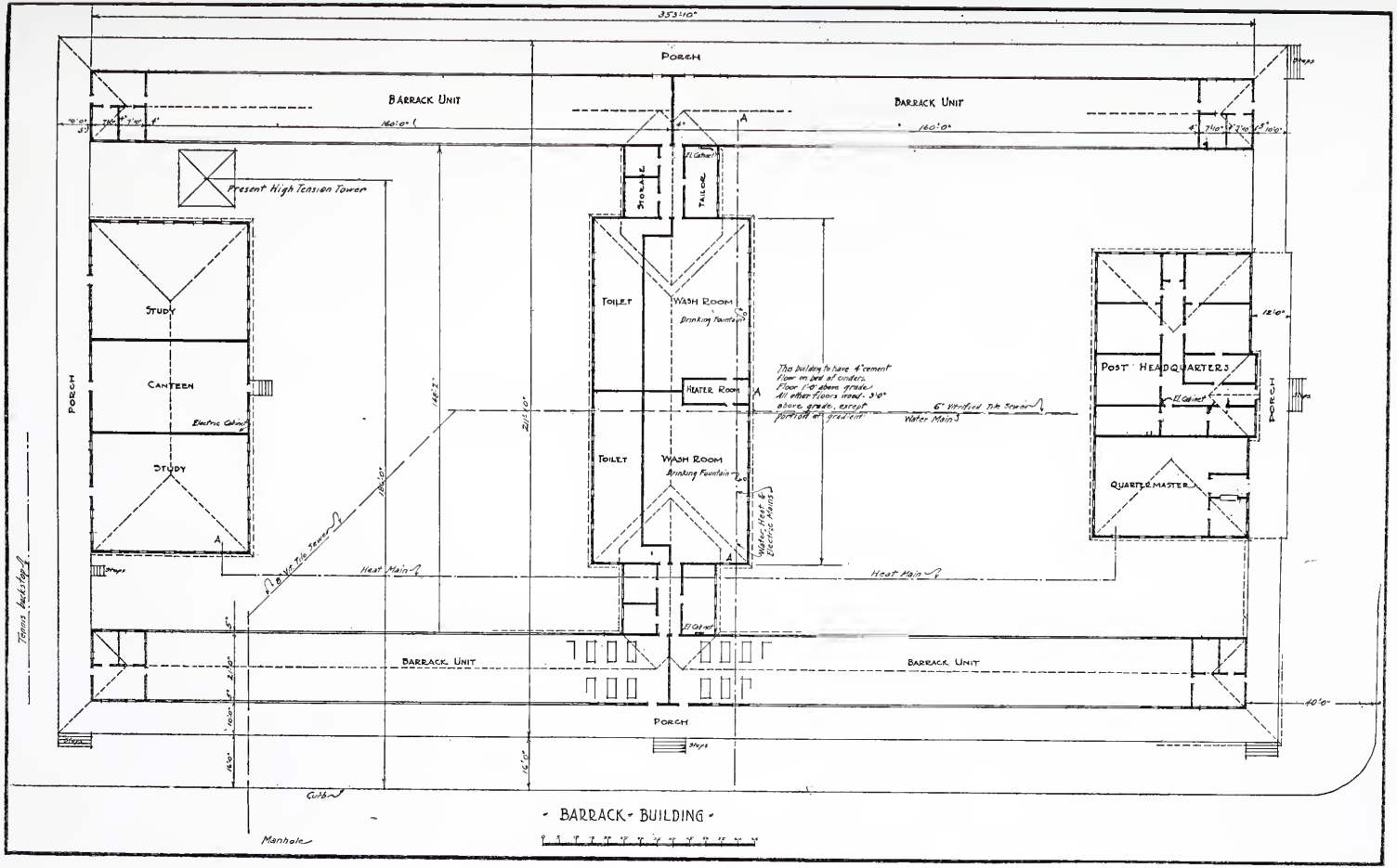
SOUTHWEST CORNER OF BARRACKS GROUP, SHOWING SOUTH AND WEST PORCHES AND ENTRANCE TO BARRACKS UNIT.
Post Headquarters Porch at Right, Screened for Summer Use.



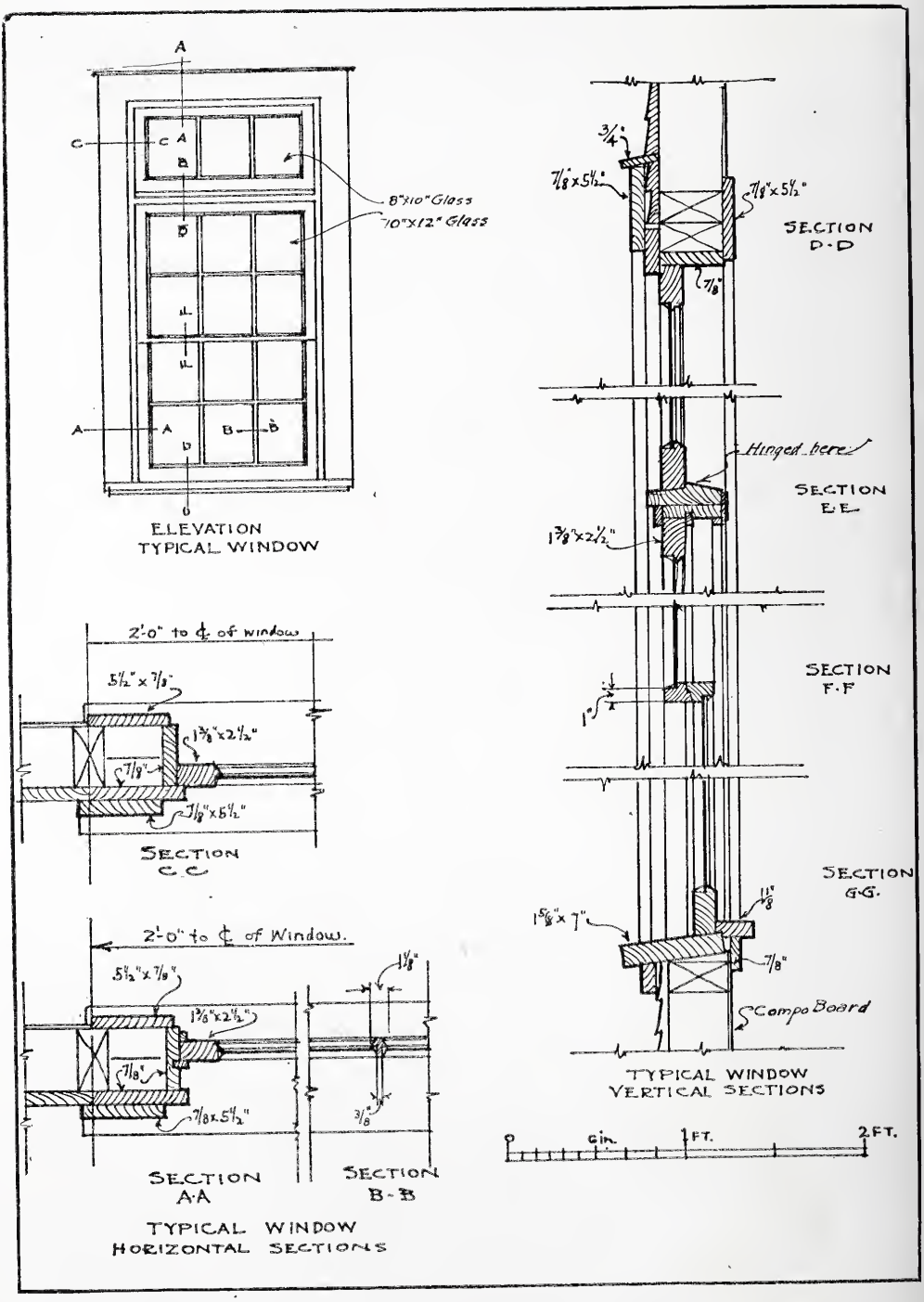
LOOKING THROUGH SOUTH PORCH INTO SOUTH COURT, SHOWING COURT WALL OF SOUTHEAST BARRACKS UNIT.
Screened Porch of Post Headquarters at Left.



BARRACKS SECTION—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



BARRACKS GROUP—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



WINDOW DETAILS—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



INTERIOR OF BARRACKS UNIT. WALLS AND CEILINGS ARE OF WALL BOARD, WITH JOINTS COVERED WITH MOLDING.

during the rigorous 1917-18 winter. In the same connection it might be mentioned, however, that the rest of the University plant, except the administration building, was closed for an extended period on account of the general policy of coal conservation. Being an army post by Government order and essential to the prosecution of the war, the School of Aeronautics, however, was supplied with proper heat.

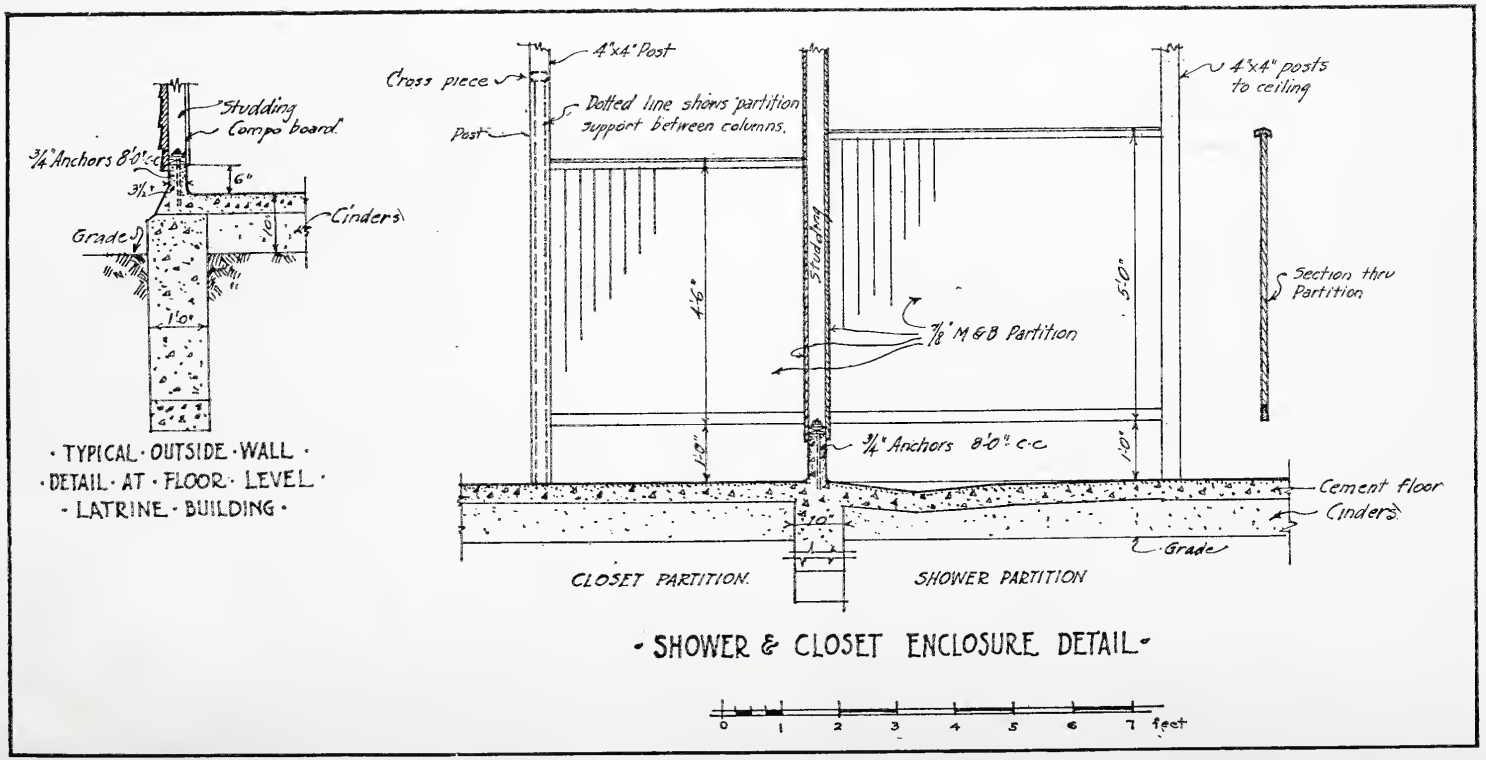
Erected by State funds for the fulfillment of a specific contract with the Government for war purposes, this group of buildings, built inexpensively and quickly, has shown that such things can be done effectively, and with some idea of good taste in execution as well as practicability in plan and construction. It shows that there are possibilities to which builders of temporary structures should be alert. There is no tangible way of measuring the effect of such possibilities in terms of strength and efficiency on the firing line. That, of course, is the ultimate test. But we feel that it is axiomatic that deep-seated high-quality morale in troops at front line is fostered by a high quality of conditions which have to do with their education and training at home.

THE HOSPITAL.

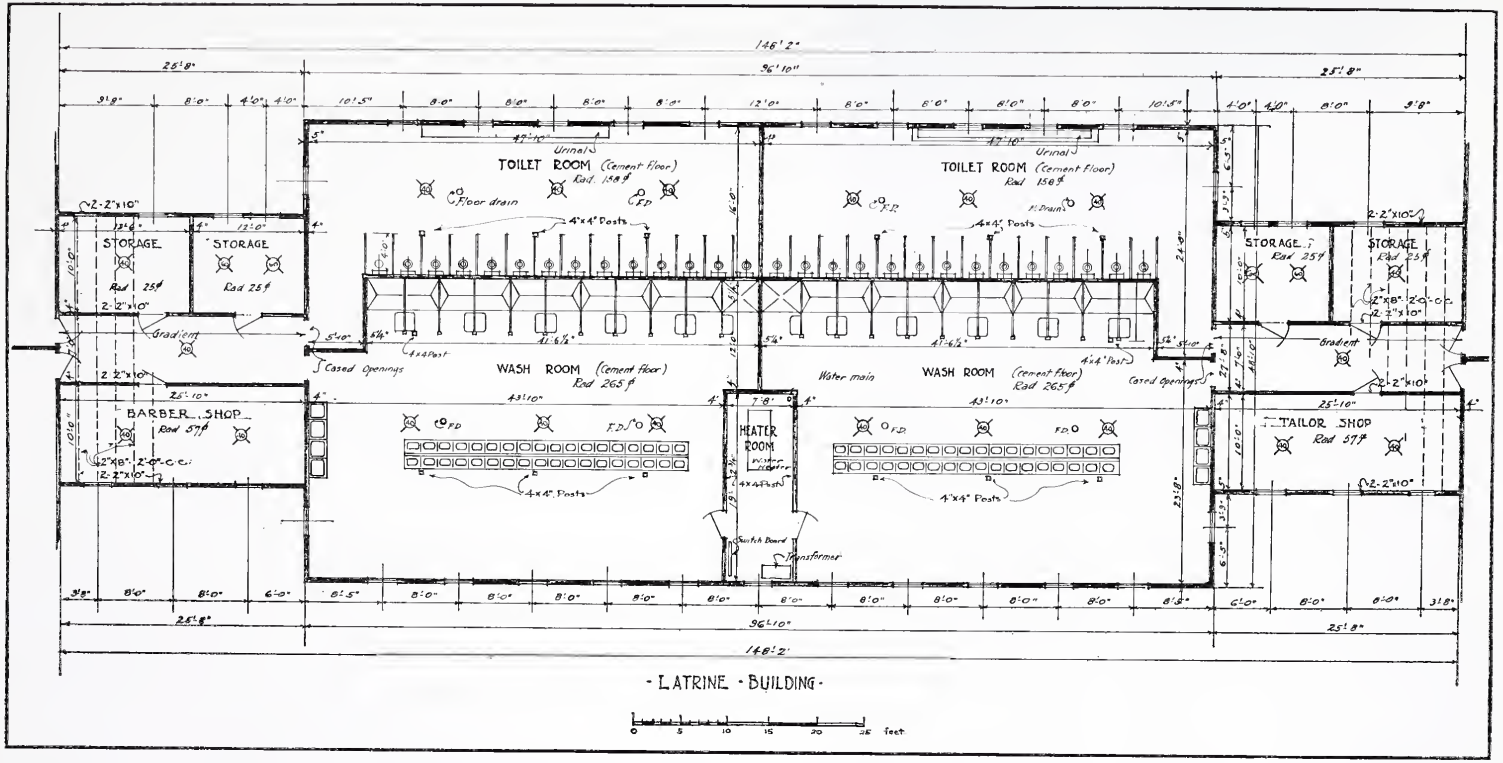
With an enrollment varying from six squadrons coming in to take the place of those graduated from week to week, entailing physical examinations and quarantines, the hospital service was rendered by regularly assigned medical officers of the army.

Under ordinary circumstances in normal times the incidental sickness occurring in the enrollment of a University is naturally taken care of privately, although there is an ever-increasing tendency toward effective paternalism on the part of the Universities with regard to the health conditions of their enrollments.

In a military establishment the conditions are manifestly different, due to continuous control of the time and activi-



CONSTRUCTION DETAILS OF LATRINE BUILDING—
U. S. ARMY SCHOOL OF MILITARY AERONAUTICS,
OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



FLOOR PLAN OF LATRINE BUILDING—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

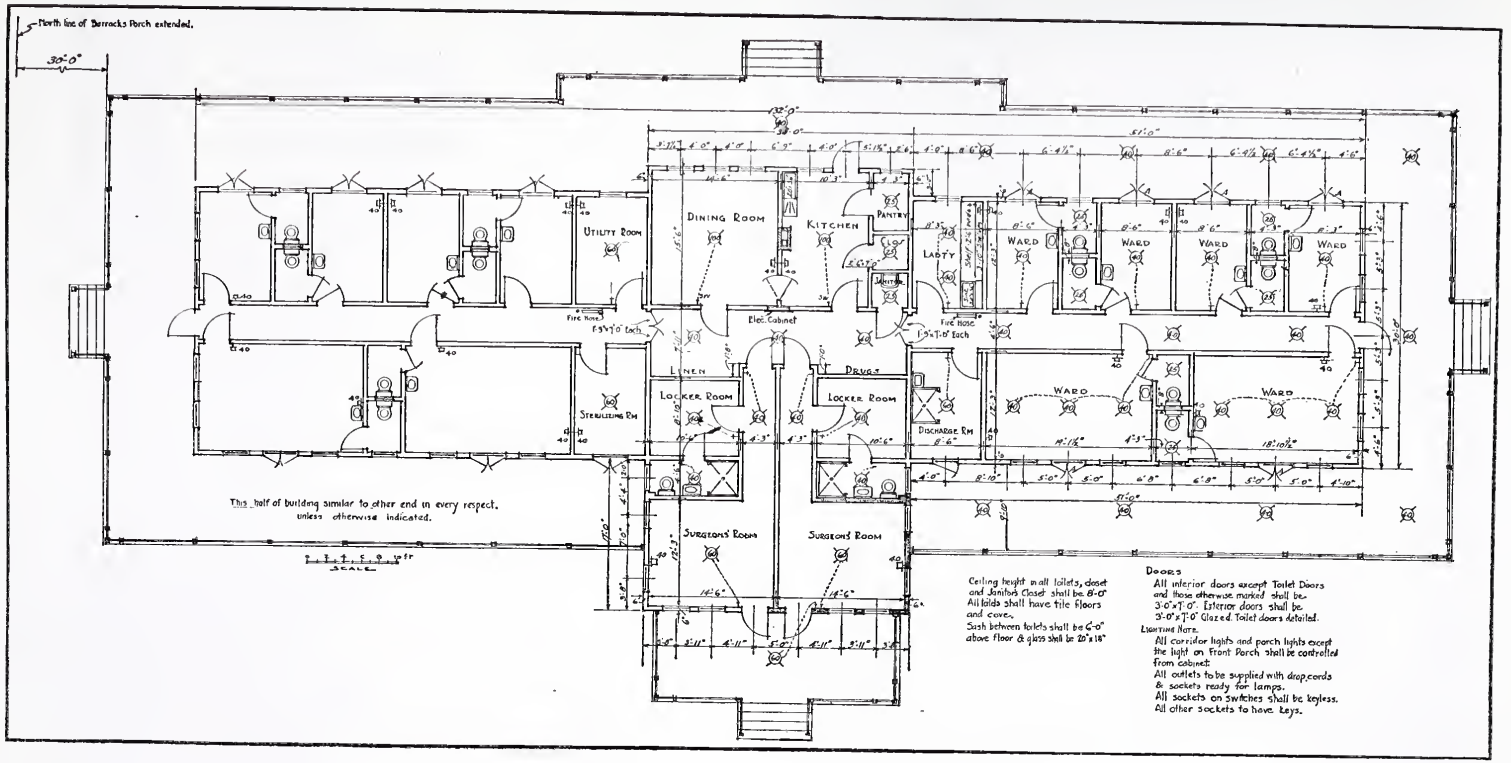


SOUTH COURT, SHOWING NORTH SIDE OF LATRINE BUILDING. CORNER OF POST HEADQUARTERS AT RIGHT.

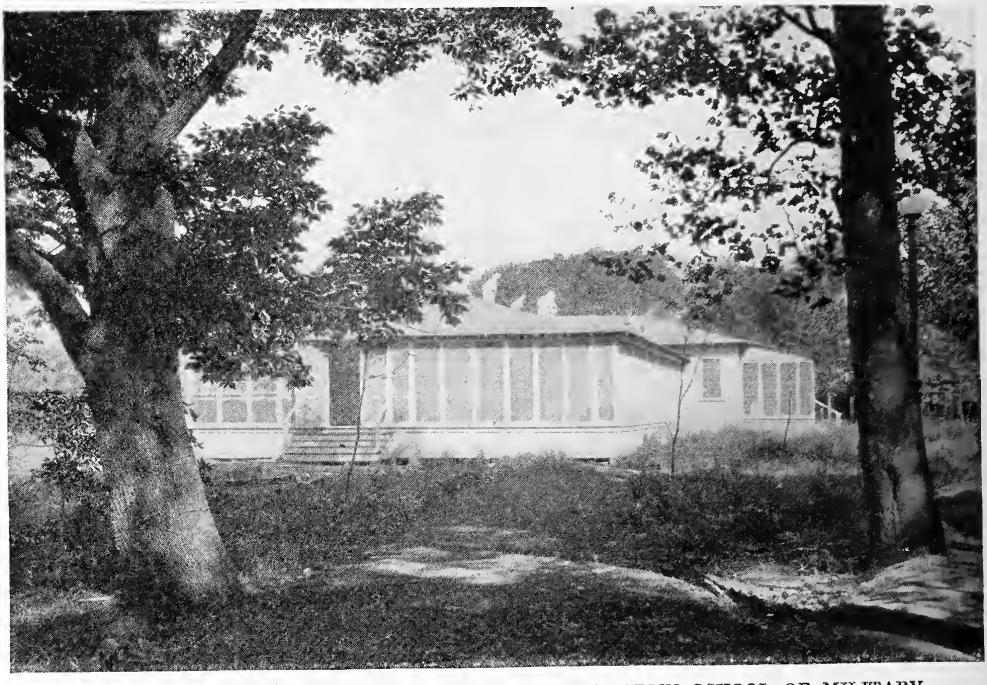
ties of the enrolled persons, that is to say of the enlisted men. Cases of sickness which occurred among the members of the School of Military Aeronautics were taken care of on the campus in the hospital of Homeopathic Medicine, by arrangement with the government. At times this was found to restrict the regular and essential activities of the University hospital and led to dual or divided responsibilities as between civilian and military doctors. Accordingly, after the School of Aeronautics had been in operation for some six or eight months, the Board of Trustees of the University authorized the erection of a twenty patient hospital which would be for the exclusive use of that School and in charge of the army medical officers regularly assigned to the post. For convenience of operation and control it was to be placed in close proximity to the barracks group.

On account of the effectiveness of the construction and appearance of the barracks group the same general ideas were incorporated in the construction of the hospital, except that in some places the materials and methods of construction have been improved with an idea of obtaining maximum sanitary effectiveness. Plaster on metal lath has been used throughout for walls and ceilings, and painted with two coats of "Hockaday" waterproof paint. This abolishes porosity and makes a washable surface. The floors in general are of double thickness with waterproofed paper between. The top floor is of maple strips, waterproofed with oil to make it non-absorbing and easily cleaned. All the toilet rooms have vitrified tile floors and sanitary base. Cement cove bases are provided in all rooms with wood floors, continuing down from the plaster walls with a flush joint. The exterior scheme and effect is similar to the barracks group.

The plan is a simple one. It has been studied and worked out in cooperation with the army medical officers with an idea of combining efficiency with compactness. The double administration portion in the front can be used effectively in case there are two doctors in



FLOOR PLAN OF HOSPITAL—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



HOSPITAL BUILDING FROM THE SOUTHEAST—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.



HOSPITAL BUILDING FROM THE SOUTHWEST—U. S. ARMY SCHOOL OF MILITARY AERONAUTICS, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

charge, or one portion can be used by doctors and one by nurses. The essentials of the plan are (1) the receiving ward for sterilization; (2) the isolation wards on the west for contagious cases, eight in number; (3) four general wards of three beds each on the east; (4) a discharging room; (5) small laboratory; (6) a diet kitchen; (7) a dining-room to be shared by patients and staff, and (8) the necessary store closets. The disposition of the contagious cases wards on one side of the building, each with its own toilet facilities, is an essential feature for the prevention of cross infection. The ventilation system in these wards is designed to be always positive through the patent roof ventilator. One roof ventilator of ward and toilet—70 per cent. of its capacity accommodating the ward and 30 per cent the toilet. Their respective registers are designed in proportion. Positive ventilation from ward to toilet is insured by having all ward toilet doors made one foot short at the bottom. Double French doors from wards to porch permit the moving of beds from any ward without disturbing the patients. The simplicity of the general plan arrangement around the central continuous corridor and the completeness of the equipment are responsible for its effective operation as a small hospital.

On account of the possibility and the great probability of the equipment being used for a campus health service department after its usefulness as an army hospital has ceased, an equipment of the very best grade has been chosen. For this reason the Board of Trustees have felt justified in expending, in proportion, a greater amount for this building than for the barracks group. While the barracks group, which was completed in the fall of 1917, cost approximately $.089 per cubic foot (exclusive of the linoleum contract, which was a separate item of $3,500), or about $1.26 per square foot of area, the hospital building, which was completed during the summer of 1918, was erected at a cost of $.26½ per cubic foot, or $3.49½ per square foot of ground area.

COST DATA

Barracks Group.	Dimensions.	Square Feet.	Cubic Feet.
Post Headquarters....	48x 87x16	4,176	68,816
Study Building.....	49x101x16	4,949	79,184
Latrine	49x 97x16	4,753	76,048
Two Passages.....	26x 27x16 (2)	1,404	22,464
Four Barracks.....	22x176x15 (4)	15,752	236,280
Porch 1,170x 10x12		5,360 (½ actual area)	36,880 (¼ actual cube)
		36,394 sq. ft.	519,672 cu. ft.

General Contract	$28,901.43
Plumbing, Heating and Ventilating.....	14,147.00
Extra Plumbing	54.79
Electrical Work	752.85
Shades and Screens.....	1,920.98
	$47,775.05
Cost per cu. ft. (porches at ¼).....	$0.0889
Cost per sq. ft. ground area (porches at ½).....	1.26

Hospital.	Dimensions.	Square Feet.	Cubic Feet.
Two Ward Wings.....	51x30x16 (2)	3,060	48,960
Administration	30x50x16	1,500	24,000
Porch	364x10x14	1,820 (½ actual area)	12,740 (¼ actual cube)
		6,380 sq. ft.	85,700 cu. ft.

Cost per cu. ft. (porches at ¼).....	$0.2642
Cost per sq. ft. ground area (porches at ½).....	3.4942



"THE POND BELOW US IN ITS EARLY SUMMER SETTING."

The Debt of Landscape Art to a Museum of Trees

By Beatrix Farrand
Photographs by George R King

THE word "museum" carries to most of us a quick memory of delightful, yet exhausting, hours spent in cold or stuffy galleries filled with more or less interesting things, all gathered arbitrarily together in that strange museum light "that never was on sea or land." We have to learn a completely new series of sensations to link with the word in the out-of-door exhibition of trees at the Arnold Arboretum.

In order to understand how this collection came to be started, we must go back just fifty years. James Arnold, a prosperous merchant of New Bedford, left a bequest of a hundred thousand dollars to the trustees of his estate, with the suggestion that the fund might be devoted to the advancement of agriculture or horticulture. Fortunately for the development of outdoor art in this country, Mr. George B. Emerson was one of Mr. Arnold's trustees. Mr. Emerson was one of the first really to see and appreciate the beauty of our New England woodlands, and his report on "The Trees of Massachusetts" was one of the earliest, and it still is one of the best, of the now multitudinous tree books which each year increase in number. Owing to Mr. Emerson's foresight and wise suggestion, the bequest was given to the fellows of Harvard University on condition that they start an Arboretum near Boston, on some land they had already received as a gift from Mr. Benjamin Bussey. The Arboretum, which has made Mr. Arnold's name known wherever people are interested in tree-growing, was started four years after his death, on the Bussey land in Jamaica Plain.

This museum of living trees and shrubs was from the first intended only to include the sorts sturdy enough to endure the stern climate of eastern Massachusetts. The nucleus of the collection was to be an assemblage of our own long-neglected, native woody plants, and to these were to be added those of other countries which were hardy enough to withstand our dramatic variations of temperature.

This brief statement of the start of the Arboretum hardly more than suggests its later and fuller development, nor do we realize, without considerable thought, how much we each and all owe to this outdoor gallery of trees.

It is humiliating, but perhaps salutary, to realize that most of us need to have our eyes opened to our daily surroundings. We may think we know every stick and stone of a certain stretch of road or a familiar view, but we are actually quite unobservant and need to be told where to look for certain features of our daily walk which would otherwise pass unnoticed. It seems as though familiarity must breed blindness as well as the traditional contempt; otherwise it would not have been necessary to call to us to stop and see what grows at our very doors. This is just what the Arnold Arboretum has done. We had to be told to stop and realize that we who live in the Northeastern States are surrounded by one of the richest natural tree and shrub floras of the world. After we had

assimilated this, we were shown its beauty and its appropriateness for use in its own home surroundings. So to-day we are really learning to see our trees and shrubs growing "in plain sight" along our roadsides.

It now seems impossible to realize that until a comparatively few years ago we took the whole wild growth of our woodlands for granted. We actually could not seem to understand what a wide range of artistic material was ours for the taking until the Arboretum succeeded in showing it to us.

Before we had learned our lesson, it was the custom to plant alien shrubs and trees and to say that our countryside had not the beauty of the English hedged fields and ferny forests, or the finished charm of the cultivated French landscape. But now, at last, we know that we are surrounded, from earliest spring till depth of winter, with a succession and variety of foliage and flower unmatched in Europe.

Let us pretend it is possible to take one of the endless fairy-tale journeys dear to our youth, and so follow the slow footsteps of the year up and down the hills at Jamaica Plain. We must start with the first warnings of spring, when the soft black earth appears and the hollows are filled with shiny pools. For, if we delay a few days, the spice-bush flowers will spread a yellow mist in the leafless woods, and we shall not see the foam of the shad-bush flowers break out. Then we must move on to the higher ground, for the early plum and cherry blossoms are opening before us. Now, on the opposite hillside, the wild apples and pear flowers are unfolding, and down in the hollow beyond the pond the young leaves of the black and white oaks show silvery pink or white.

We have already spent several weeks on our imaginary journey, so the days are long as we wander up the hill and see the pond below us glistening and flashing in its early summer setting, and catch the scent of the mass of wild roses bordering our path.

Suddenly one of the first hot days of the season overtakes us, and our valiant stride up the slope slackens to a saunter. Shall we bravely push on past the lilacs to the hilltop with its scattered pines, its breeze and its view over to Blue Hill, or shall we weakly seek the shelter of the oak or hickory groves? We decide to wander lazily through the woods, knowing that we shall find shade and that soft grass walks will lead us to the valley where the rhododendrons and laurels cluster against the dark grove of hemlocks on the hill.

It is hot midsummer now, and the elder is in bloom as we walk up the Valley Meadow, but the prim regiments of spruces and firs will keep us busy in the Pinetum or the hillside till we realize that autumn is beginning. Then we go up to the newer part of the Arboretum on Peter's Hill to see the thorn plantations and all their gay foliage and fruit. And so the days grow short and cold, and the leaves drop, and perhaps the first snow falls as we retrace our steps to the Valley Meadow.

In our imaginary excursion of only a year, we have seen the result of more than forty years of steady and intelligently directed work. The plantations of trees and shrubs we saw were brought together, each sort in a family party. Some members of the group are our near neighbors, while others have had to be sought in far-away parts of the world.

Expeditions in search of new and promising materials for our woods and shrubberies have gone from the Arboretum all over our own country and to Chile and Peru in South America. The Caucasus has been explored; Japan and Korea have yielded much, while from northern and western China Mr. E. H. Wilson has recently brought back quite the most interesting plant material of the last thirty years. In his booty there are new wild roses, pale yellow, white or pink, new bush honeysuckles and spiraeas, and quantities of new and untried rhododendron seeds are now being grown in the experimental nursery.

To any of us whose work lies among plants, the Arnold Arboretum has been a constant prop and an invaluable help.



"THE MASS OF WILD ROSES BORDERING OUR PATH."



"THE HILLTOP WITH ITS SCATTERED PINES AND ITS VIEW TO BLUE HILL."



"THE SHELTER OF THE OAK GROVE."



"THE RHODODENDRONS AND LAURELS CLUSTER AGAINST THE DARK GROVE OF HEMLOCKS."



"IT IS MIDSUMMER AND THE ELDER IS IN BLOOM IN THE VALLEY MEADOW."



"THE PRIM REGIMENTS OF SPRUCES AND FIRS IN THE PINETUM."



"THE FIRST SNOW FALLS AS WE RETRACE OUR STEPS."



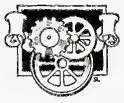
"THE HEMLOCK-COVERED HILLSIDE."

We have studied there year after year and realize more fully at each visit how much we owe to its revelation of beauty. We have learned from it that the only way to use plants intelligently, as well as artistically, is to know their natural habit of growth and the surroundings in which they are happy, and then to observe their individual qualities and structure, color of leaf, flower and fruit, and their changing aspects in the various seasons. In this way we may gradually acquire the instinctive appreciation of those characteristics which give a composition contrast and value.

No amount of book-learning will teach us what is appropriate in a planting scheme and what is in proper scale, but we must be dull of perception if we fail to absorb, almost unconsciously, the teaching of the object lesson we are studying. It is an extraordinary achievement to have succeeded in making a scientific botanical collection of trees and shrubs an artistically admirable whole. The feeling of restlessness created by too great a variety of plant material is quite absent here, as the natural features of the land have been used in a masterly way. Broad spaces of meadow have been kept to rest the eye from the definite detail of the collections, and the beauty of the hemlock-covered hill has been kept untouched, so that all may see when to let well enough alone.

The controlling master hand has been that of the Director of the Arboretum, Professor Charles Sprague Sargent. Distinguished in the scientific world for his botanical work and the great fourteen volume "Silva of North America," he has yet given his unstinted time and unequaled knowledge to the creation of this out-of-door museum. Intolerant of any but the best, and instinctively sensitive to the artistic possibilities of plants, his quiet, persistent work has given us all a new revelation of beauty.

MODERN INDUSTRIAL PLANTS



By George C. Nimmons

Part I.

NEVER before in the history of this country have its industries and commerce been of such vital importance as they are just now. It is not alone that our soldiers must be fed, clothed and supplied with munitions; there are many nations whose people are more or less dependent upon us for their very existence.

To fulfill our great obligation, essential industries are being worked to their fullest capacity and the necessary commerce is being carried on with a speed and an intensity never before equaled. The increasing cost of labor and the rising prices of materials have no effect in diminishing output. Factories, warehouses, shipbuilding plants, are all being rushed to completion, and the energy of the nation is gradually being drawn into one gigantic effort to supply whatever may be needed to win the war.

This is, above all, a time for securing the greatest possible quantity production by methods already established; but a time is coming when the present methods will not avail. When the war is over, the big driving force back of our tremendous current production will be gone. The shops doing war work will close, the men will lay down their tools and the owners will be confronted with the problem of altering their plants to produce different goods, of obtaining new customers and of operating under selling prices that must admit of a profit while meeting both foreign and domestic competition.

Foreign markets and foreign competition will receive more attention than they have ever before received in this country; it will be necessary to find employment for the enormous fleet of ships now being so rapidly produced for war transportation.

The soldiers returning will also look largely to the industries and to commercial houses for employment, and business will have to be so rearranged as to absorb them back into the positions where they belong.

The future has some hard problems stored up for solution. Anyone with the proper confidence in the ability and resourcefulness of the American people knows that these problems will be solved; but it will not by any means be a simple or an easy matter. On this account a most thorough study should be made in preparation of meeting the great change when it comes. Everything that can possibly help toward developing the industries and commerce of this country should be most carefully considered, and public attention should be directed to the great importance of discussing and determining all those agencies and policies which will assist them to establish themselves on a prosperous basis.

Among such agencies there is probably none that is so little understood as is architecture. Many manufacturers and commercial men do not even know that there is any important relation between their pursuits and architecture. Buildings to them often mean only shelter, four walls and a roof. Many of the improvements made for war work have simply been so much added space. Frequently this space has been obtained by erecting stock buildings, which, being prepared in units to suit every one, are devoid of features that would adapt them specially to the particular needs of the business in question—features looking to more productive and more econ-

omical methods of operation, more skillful and better workmanship and more contented workmen. Such features it is the function of the profession of architecture to provide.

There is hardly a business of any importance that is not in large measure dependent for its success upon its buildings—that is to say, upon problems of design and plans in construction, the solution of which is the one great object for which an architect receives his training. Unfortunately, many business concerns are operating under handicaps of poorly arranged and inappropriately designed buildings that absolutely prevent them from producing or handling their goods to the best advantage.

Before discussing the possibilities of architecture as an agency in developing industry and commerce, a word or two may be said concerning the reasons for the partial neglect of this agency in the past.

In the first place architects have not advertised, although recently the American Institute of Architects has removed from its code of ethics the clause against advertising. Neither has the work of architects been published extensively in the periodicals and magazines which reach the mass of people. Then also, for some unaccountable reason, the newspapers have largely adopted the policy of not mentioning the architect's name in conection with his work, although they give due credit to the painter, the sculptor, the landscape architect, and even the real estate agent.

Consequently few people know that some of the greatest industrial plants in this country were designed by architects and erected under their supervision, or that some of the most useful innovations and improvements in the construction of industrial plants were originated by architects, who take out no patents or copyrights.

Still another reason for the poverty of information as to the role of architecture in industry is the scarcity of good books in English on the subject of manufacturing plants and commercial buildings. Of the books which do exist some only add to the misinformation already prevalent. In one instance, the author of a volume which has had a considerable circulation draws the conclusion that architecture has usually a minor part to play in connection with the building of an industrial plant. He evidently holds the conception that the chief function of an architect is to put ornamentation on a building after someone else has planned it and worked out its construction.

Another book that is quite popular, although it is by an author who does not make a profession of designing or building industrial plants, gives no credit whatever to architects for the great industrial buildings which they have done and some of which it illustrates. In one instance, at least, the author illustrates a prominent building which was designed entirely by an architect, without even securing the architect's permission for its publication. However, what is most harmful about the book is the shortsighted advice given in the chapter which directs the manufacturer how to go about securing the plans for the construction of the plant. There is not a word in reference to obtaining the services of an architect or an engineer, except to procure a survey plat of the site. On the contrary, the manufacturer is instructed on the assumption that he is to act as his own architect or engineer and make his own plans. The great regret of having such advice spread broadcast among industrial men is, of course, its effect in interfering with the natural improvement and development that might otherwise come through the preparation of the plans and designs by men who make it a lifework.

Among books of real worth must be mentioned that of Dr. G. M. Price, entitled "The Modern Factory." While Dr. Price is a physician and not a designer or builder of factories, there is probably no one in America who has had the experience which he has had in the inspection and study of industrial plants. He has been not only a student and a teacher of sanitary science, a practitioner among factory workmen, a sanitary inspector of the New York Health Department, a



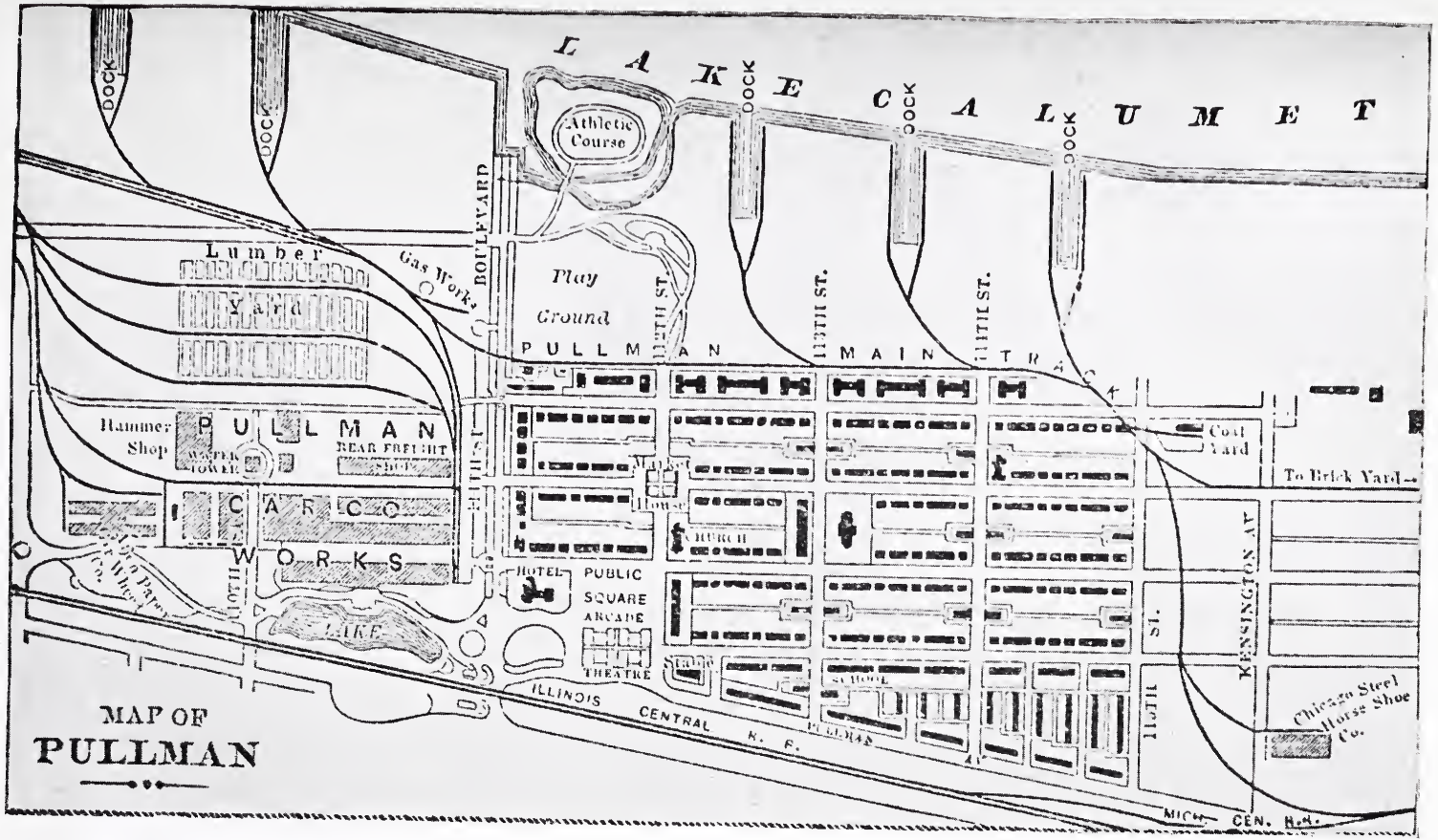
PUBLIC PARK, PULLMAN, ILL., WITH RESIDENCES ON THE RIGHT.
S. S. Beman, Architect. N. F. Barrett, Landscape Architect.

director on various inspection boards, but also the representative of the U. S. Government in inspecting the important factories in the principal countries of Europe. His book is a splendid record and is full of valuable information and sound advice.

There remains a commercial source of misinformation which cannot be overlooked—namely, a certain class of engineers and construction companies. The writer wishes to state distinctly that he intends no reflection whatever on those engineers, in the various branches related to building, who have always cooperated with architects and who practise their profession in the customary and legitimate manner. Reference is solely to a class of building companies which undertake to produce the completed building at apparently a greatly reduced cost. They claim to save a part or the whole of the architect's and engineer's fees, on account of having such men in their own organization. As a matter of fact, their "architect" usually consists of a draftsman with no ability or experience commensurate with the importance of the work performed. Furthermore, as there is no independent architect or engineer to check and control their work, these companies are themselves the sole judge as to whether the work fulfills the contract and specifications. The dual situation of judge and workman calls for rare strength of character in a firm which engages in a business so complicated and disputable as building construction, and whose profit depends upon using as little material, of a quality as inexpensive as can be bought, and with as small an amount of labor and workmanship, as will just come within the limits of the contract.

It seems most fitting, therefore, at this time to discuss the relationship between architecture and the industries and commerce of the country. It is proposed to define this relationship and to show by concrete examples that the service of architecture is essential to their highest development.

The modern factory system dates from the invention of the steam engine and of



MAP OF PULLMAN, ILL. S. S. BEMAN, ARCHITECT. N. F. BARRETT, LANDSCAPE ARCHITECT.

machines for cloth weaving between 1767 and 1785. It had no sooner become established than many of the owners of large factories began to operate them with children. A period of employment of child labor then followed, which forms one of the darkest pages of industrial history. The manufacturers first took the children of free workers to fill up their factories; and when these failed to supply their needs, they employed graft with the poor-law officials to obtain possession by force of the children of the poor.

The following account from Alfred's "History of the Factory Movement," quoted by Dr. Price, gives a good idea of the child slavery of this early time:

"In stench and heated rooms, amid the constant whirling of a thousand wheels, little fingers and little feet were kept in ceaseless action, forced into unnatural activity by blows from heavy hands and feet of the merciless overlooker, and the infliction of bodily pain by instruments of punishment. They were fed upon the coarsest food, often with the same as that served out to the pigs. They slept by turns in relays in filthy beds which were never cooled. There was often no discrimination of sex; and disease, misery and vice grew as in a hotbed of contagion. Those who tried to run away had irons riveted to their ankles with long links reaching up to the hips, and were compelled to work and sleep in these chains. Many died and were buried secretly at night, and many committed suicide."

It is a striking illustration of the extent to which a criminal practice will sometimes go before the law intervenes. The gradual enactment of laws to cure the many great wrongs that have disturbed and often outraged the industries are more and more establishing a permanent foundation of peace and harmony; but the greatest drawback of the law is that it usually intervenes only after the trouble has occurred. Great suffering and astonishing injustice are often endured before public interest can be aroused sufficiently to take action.

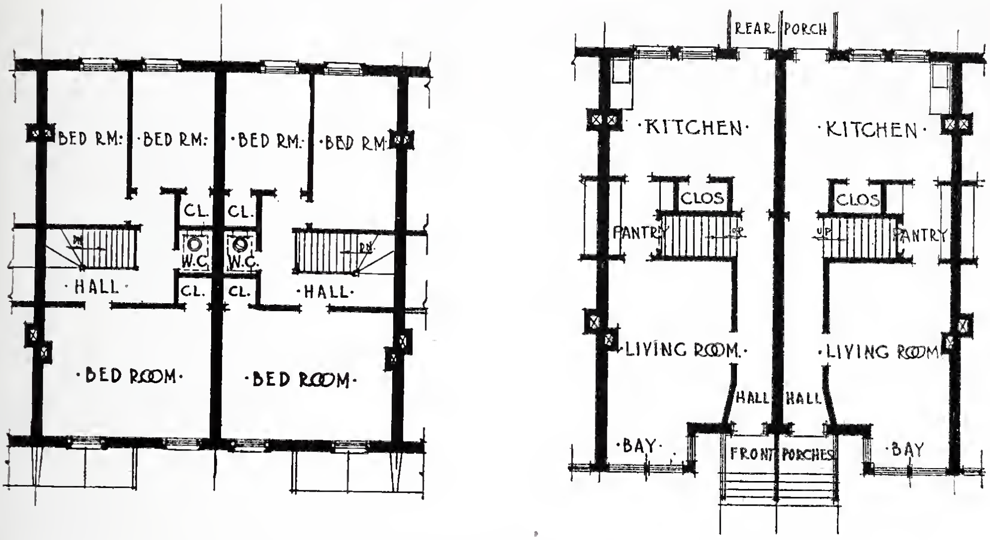
Past experience with industrial troubles teaches one thing above all others—namely, that unless both employer and employee adopt and adhere to policies founded on fair treatment there can be no material progress or development of commerce and the industries.

This conclusion is gradually taking root among all classes, including employers; and as a result we have the development of welfare work, the progress in sanitation, and the promotion of better housing—matters which are being so actively promoted at this time both here and in England. Correlated with this general humanitarian movement, is the marked development in the plan and design of the modern factory that is doing so much to secure greater production at lower cost and to improve both the quality of the workmanship and the standards of the output of many concerns.

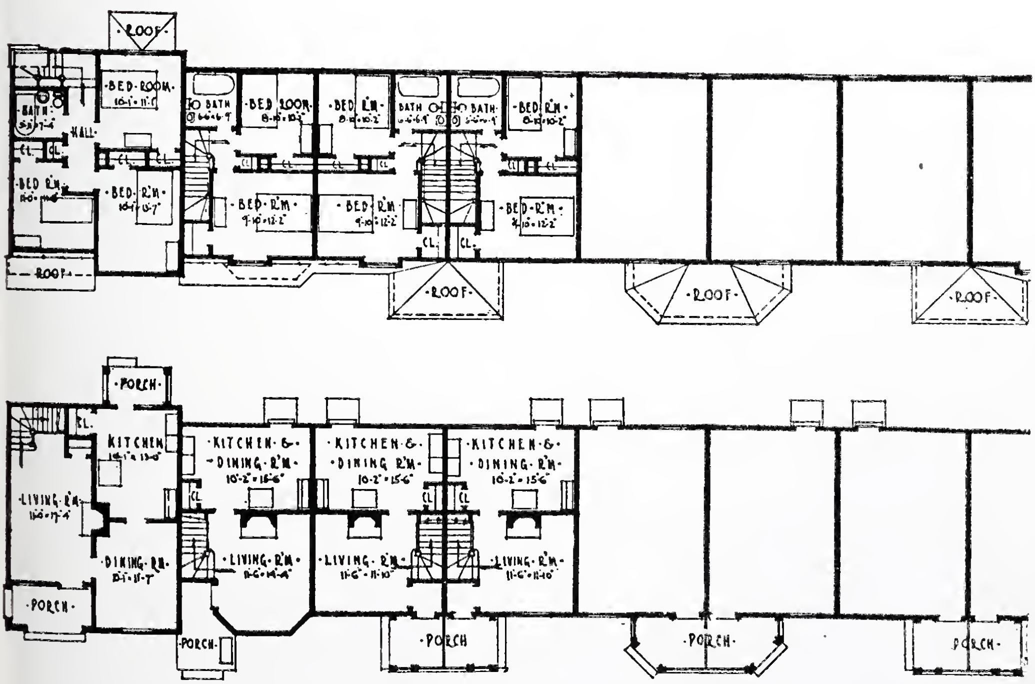
A large part of the population of this country are industrial workers. Our material prosperity depends upon a successful and satisfactory operation of industries and freedom from serious or general labor troubles. Whenever, therefore, any manufacturer or commercial concern institutes conditions in its plant that are better than the minimum required by law for the care and control of its employees, and when at the same time it erects buildings which by their plan and design result in reducing the cost and improving the quality or the manner of handling its products, then such a concern is a public benefactor. It enriches the country, by giving profitable employment to many people; and by making working conditions attractive, it reduces the extent of labor troubles.

I will close this introductory paper with a brief reference to the historically noteworthy industrial town of Pullman, Illinois, because it was the first attempt made in America to incorporate in one project both an ideal working plant and an ideal home environment.

When George M. Pullman, in 1880, decided to build a great central plant for the manufacture of sleeping and dining cars, he selected as his architect S. S. Beman, of Mr. Upjohn's office in New York. Mr. Pullman wished to make his



FLOOR PLANS OF A TYPICAL FIVE-ROOM HOUSE AT PULLMAN, Ill.
S. S. Beman, Architect.



FLOOR PLANS OF TYPICAL SMALL HOUSES FORMING PART OF A BLOCK AT NEWPORT NEWS, VA.
Francis Y. Joannes, Architect.

new town a model of its kind, being convinced that the maximum production of cars at the lowest cost would depend partly on the proper arrangement and design of the factory buildings, and partly on the effect which model homes and home surroundings would have in raising the efficiency of the men.

Mr. Beman, to whom the problem of designing and supervising the construction of the plant and dwellings was intrusted, was a man of the highest attainments among the architects of his day; and he was ably assisted in the landscape work by N. F. Barrett. The site was located twelve miles south of Chicago, with the Illinois Central Railroad on the west and Lake Calumet on the east. The manufacturing plant was placed in the center, and the dwelling houses were built in two groups, one north and the other south of the plant. The railroad connection was brought in from the rear, where also provisions were made for shipping by boats on Lake Calumet. Separate buildings were erected for the manufacture of the various parts of a car, and these buildings were so placed that the assembling of a car goes on logically from front to rear of the plant. As a Pullman car is a big unit to handle in manufacturing, a great traveling bridge platform operating between the buildings was installed, on which a number of cars can be rolled and then drawn either straight ahead or laterally to other buildings. Thus one sees nothing but the skeleton erected in the first shop. When this is done, it is immediately forwarded to the next in the row of factories making the numerous parts that are comprised in the finished car. As the design of cars varies constantly, the operation of manufacturing and assembling is by no means a stereotyped one; but it works perfectly just the same. Originally the cars had timber frames and were finished in fine hardwoods. The old models and patterns of the wood carvers still hang above their benches; but there is little work for them to do except on repairs, the new cars being made and finished in steel.

The more important of the two groups of dwellings lies south of the works. The plant was separated by a wide east and west boulevard that runs through to the lake. The village, as well as the plant, was designed with a generous foreground between it and the Illinois Central Railroad. The foreground contained a lake, a park, curved drives and walks, flowers and a planting of fine trees and shrubs. East of the park was a first-class hotel, named Florence, after Mr. Pullman's daughter; to the south, the Arcade Building, containing a bank, the post office, a theatre, and shops and stores. On the axis of the street running east from this is a group of apartment buildings facing a circular court, in the centre of which is the market house. There were also a schoolhouse, a church and stables. All the residence streets were lined with trees; and the walks were separated from the streets by green parkways and lawns, planted here and there with shrubbery and flowers. The houses had no dark courts; everywhere the windows were made to stand free for sunlight and ventilation and to look out on some lawn or pleasant landscape. The drinking water, from Lake Michigan, was obtained far out, away from impurities; and the sewer system disposes of the sewage scientifically miles inland, where it was utilized for fertilizer on the large vegetable farm of the company. As a natural and certain result in a community so planned, the records show a death rate far below the average.

The houses of Pullman were not intended to be sold. However, no restrictions were placed against any workman buying a lot and building his own home adjacent to the company's property, plenty of land being available. There were no saloons in the town and no establishments of an objectionable character. There were theatrical and other entertainments, and the social life of the workmen and their families was provided for as completely as was the community life of the village.

With its pleasing water tower dominating the central group of buildings, in which variety was merged into architectural harmony, and the contour of

which slopes off to the low two-story dwellings, the village of Pullman, in its fine setting of trees, lawns and flowers, made a picture at once impressive and beautiful.

As to the influence exerted upon operatives by the environment of the shop and of the home at Pullman, it was summed up as follows in an article published in New York World of December 25, 1892:

"Whenever any manufacturers over the land have a necessity for more employees, their first effort is to get men from Pullman. The influences of Pullman town, which made the men there more valuable to the Pullman Company, made them more valuable elsewhere. The place has become a training school for the development of thrifty and thoroughgoing American workmen and mechanics."

Unfortunately, there had been in existence for years a law in Illinois which, although somewhat vague in meaning, was intended to define just what land and real estate a corporation might own and control. The question being raised whether the Pullman Company had a right to own any land other than that devoted strictly to industrial uses, the matter was finally brought before the Supreme Court of the State, which in 1895 handed down an opinion that the company must dispose of all its land, homes and buildings not strictly employed in the manufacturing authorized by its character. By 1905 everything outside of the manufacturing plant had passed out of the company's control and ownership.

Since then the village has deteriorated both in character and in appearance. The upkeep of streets and homes and public buildings has been neglected; and the Illinois Central Railroad has filled in the beautiful lake, destroyed part of the park in front of the plant and cut down trees and shrubbery in order to make room for branch lines. Switch tracks, empty cars, coal piles and kindling sheds now give an appearance of a junk yard to what was once the beautiful foreground shown in the illustration.

A lesson of particular interest is to be drawn from the workmen's dwellings at Pullman. Although Mr. Beman planned these houses thirty-eight years ago, they are the same in principle of arrangement as many of the model dwellings now being built under the impetus of the great housing movement in this country and in England. In order to show this, a plan of the smaller Pullman houses is illustrated alongside of some of the modern ones. The principle of arrangement is to have no dark narrow side courts, but to make the buildings only two rooms deep, so that every room shall have direct and unobstructed light and air.

As to a corporation owning and renting houses to employees, there are many notable instances today. The policy has proved to be sound, and it secures advantages both to employers and to employees. Unfortunately, the law at present permits speculators to grab the land in the vicinity of a manufacturing plant, and lay out a town devoid of playgrounds, breathing places, and other essential features of a modern industrial village, the sole motive being to sell the largest possible number of lots from a given area. The lots and, consequently, the buildings must be long and narrow from front to rear, so that all the side windows are dark. The high price the workman pays for his land makes his taxes higher than they should be, compelling him to share his dark and unsanitary lot with other tenants to earn a fair return on the investment. In the absence of proper legislative control, the industrial town developed by speculative enterprise is inevitably ugly, repellent, unsanitary.

It is a curious commentary on the halting and uneven progress of reform that, although we no longer permit manufacturers to exploit child labor, we still permit real estate operators to exploit without let or hindrance entire industrial communities.

There can be no doubt but that control of the building and maintenance of industrial centers is one of the most urgent legislative questions of the day.



TYPE "A," HOUSING ABOUT ONE HUNDRED GIRLS, CONTAINS RECREATION FACILITIES AS WELL AS LIVING AND DINING ROOMS, AND IS DESIGNED FOR USE WHERE ONLY ONE BUILDING IS TO BE ERECTED.

HOUSING *for* WOMEN WAR WORKERS

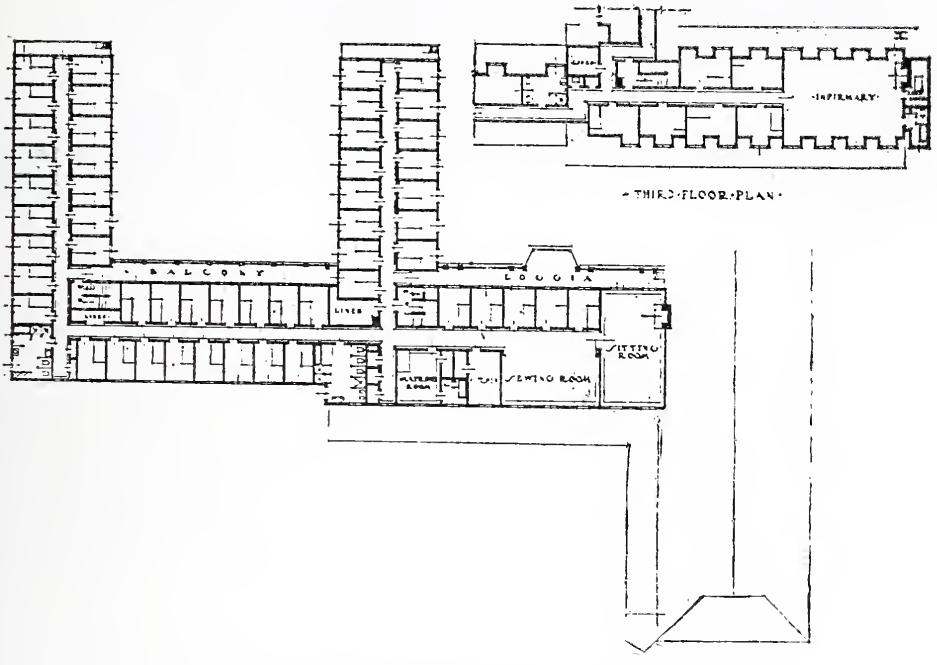
By
Robert H. Moulton

WAR brought the men of America to the camps of the country. It brought the women, too—mothers, wives, sweethearts. The Government made its plans for the men, but it made them without thought of the women. Then the women came to visit their soldier relatives. The camp commanders looked at the stream of femininity and asked what was to be done. Then the War Department began to think of the women, and finally it asked the Young Women's Christian Association for help. The Hostess House was the answer.

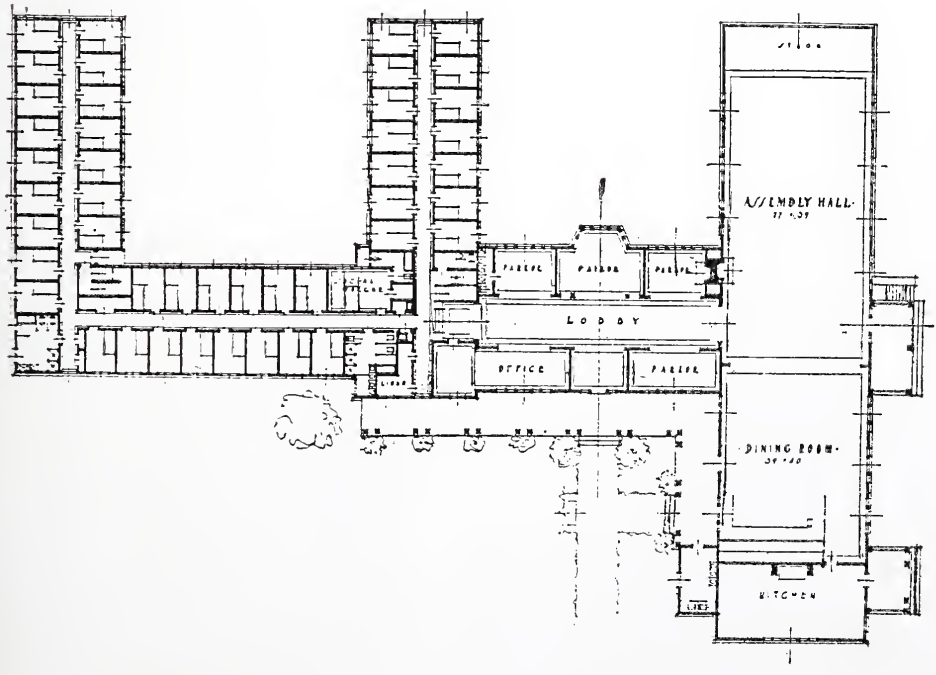
Eighty-five of these unique establishments are now either in operation or are definitely under construction. They are put up only at the direct request of the camp commandants. Some of the commanding officers were a little doubtful at first as to the practicability of the scheme. Now these same officers are asking for second and third Hostess Houses in their cantonments.

These centres of hospitality are under the supervision of the War Department's Commission on Training Camp Activities. They are a part of the Government's war work. The War Work Council of the Young Women's Christian Association promotes them as one phase of the Association's work for the country in this national emergency.

One phase alone of the work carried on in the Hostess Houses would justify their existence. Each house has a directory, a street guide, a map, a telephone exchange, a finding bureau, and a waiting room for visitors.



SECOND AND THIRD FLOOR PLANS OF TYPE "A" BUILDING.



FIRST FLOOR PLAN OF TYPE "A" BUILDING.



TYPE "B," HOUSING ONE HUNDRED AND FIFTY GIRLS, IS INTENDED AS A UNIT OF A GROUP OF BUILDINGS CENTERING ABOUT A RECREATION BUILDING (ILLUSTRATED ON PAGE 428).

An interesting feature of the Hostess Houses is that the architects in charge of the construction are women. Miss Julia Morgan is in charge on the Pacific Coast, while Miss Catherine Cotheal Budd has the Southern and Middle West fields.

Another work of the greatest importance which has just been undertaken by the Young Women's Christian Association is the housing of women workers in connection with our great industrial establishments. While this is not strictly a problem created by the war, the calling of many women workers to war service makes the situation immediately acute. Obviously the providing of proper housing for these newly called women workers, since it is a part of the war program, must be done by the Government. The Young Women's Christian Association is now constructing at its own expense two buildings as a demonstration: one at Camp Sherman Annex, Chillicothe, and another at Charleston, South Carolina, for the women employees in the navy uniform factory. The latter is being built at the request of Secretary Daniels.

Based on its experience in housing girls during the last fifty years, the Association believes that younger girls should be grouped where they can have social life and an opportunity to entertain friends and still be under some of the restrictions of the home; that older women want independence of living, many of them objecting to living in large groups because of the noise and confusion and ensuing fatigue; and that it is more successful to house the non-English speaking foreign girls in small groups until they learn English and become used to American customs.

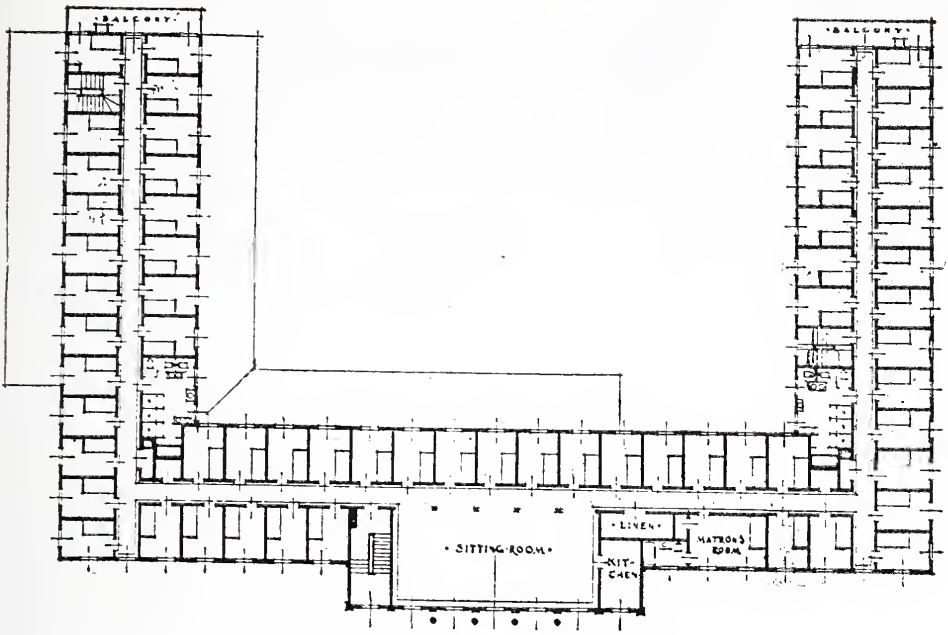
The type "A" building, the permanent structure that the Y. W. C. A. is now building at Charleston, is designed for use in places where only one building will be erected. It includes not only living and dining rooms, but also recreational facilities. There are adequate fire-escapes outside the building as well as two fire walls inside.

The dining room and recreation hall, several parlors, and bedrooms for forty-four girls are on the first floor. There is but one entrance for the residents. This makes it possible for the matron or social head of the house, who is in the office near the door, to see every one who comes in or goes out.

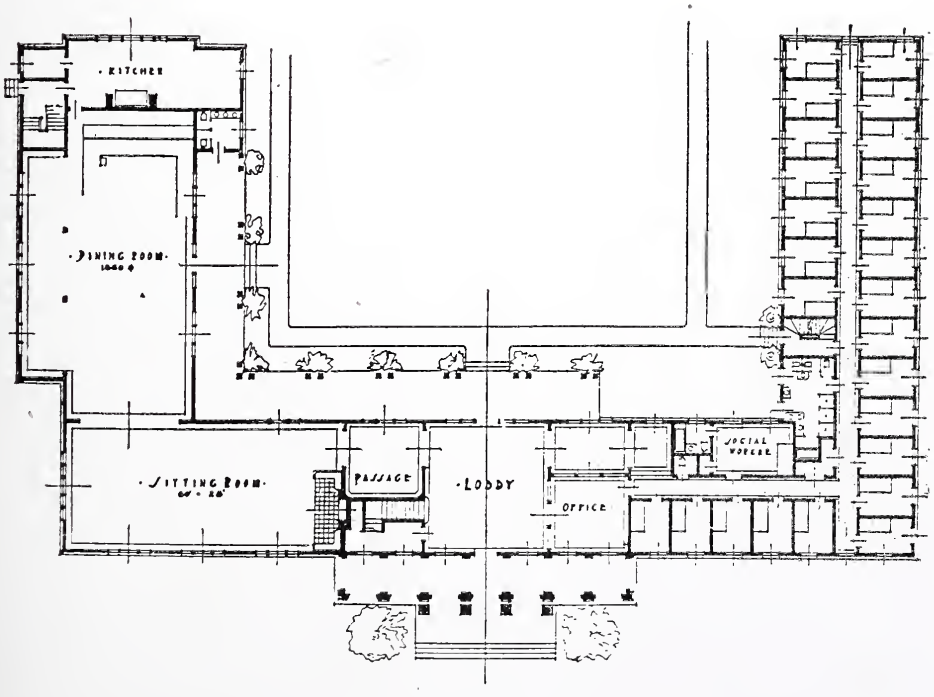
The entrance hall is attractive and homelike. Opening out of it are several parlors separated from the hall by arches. To the right is an entrance to the wing containing the recreation hall and dining room. These rooms are so arranged that they can be thrown into one for large social gatherings.

The dining room is reached also by an entrance from the porch outside. This makes it possible for people to go to lunch in the cafeteria without passing through the house. There is a lavatory, with wash bowls and toilets, adjacent to the dining room, giving an opportunity to the girls who come directly from work to wash their hands before eating. This is important from the point of cleanliness and for the sake of the girls' health.

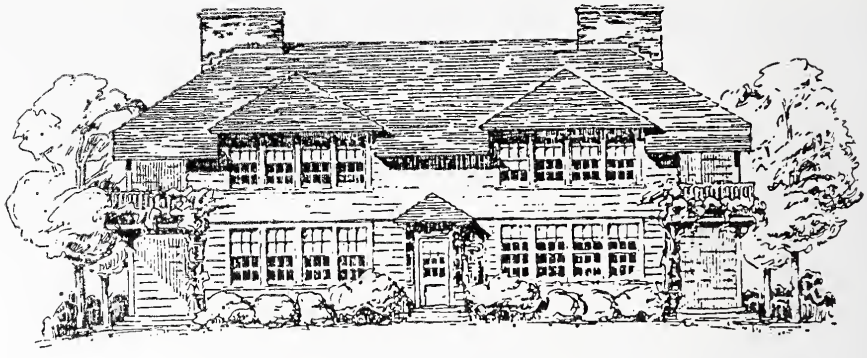
The dining room is arranged with a serving table at one end that can be used for cafeteria service at noon if desired.



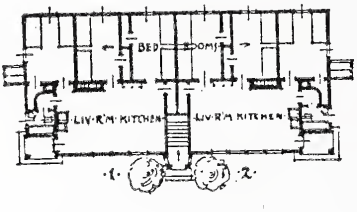
SECOND FLOOR PLAN OF TYPE "B" BUILDING.



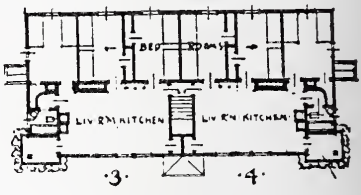
FIRST FLOOR PLAN OF TYPE "B" BUILDING.



ENTRANCE ELEVATION



FIRST FLOOR PLAN



SECOND FLOOR PLAN

TYPE "C," ARRANGED INTO FOUR APARTMENTS, EACH WITH THREE BEDROOMS, A COMBINATION LIVING ROOM AND KITCHEN, AND A BATH, IS INTENDED FOR THE USE OF FOUR GROUPS OF OLDER WOMEN OR OF NON-ENGLISH SPEAKING GIRLS.

For the other two meals a set menu will be provided, as the girls choose very unwisely if left to themselves.

The recreation hall has windows on three sides, with a stage set at one end. There is a fireplace in the side wall. This room can be used for a gymnasium and for social parties. It can also be arranged in such a way that several classes can be held at the same time in different parts of the room.

In order to get to the sleeping rooms on the first floor it is necessary to pass the office. Next to the office is a room with a private bath for the head of the house. The bedrooms are all single, eight feet by twelve. Each room has a single bed, dresser, chairs and table, and closet, Single rooms not only give the privacy and quiet which girls working every day need, but also make the management of the house much easier.

There are bedrooms for fifty-one girls on the second floor. There is also a sitting room separated from the hall only by pillars. This is for the use of the girls only. Next to this is a small sewing room, with facilities for sewing. Toilets, wash bowls and baths are grouped on each floor. There is one toilet to every ten girls, one wash bowl to every six girls, and one shower to every ten girls. There is at least one tub on each floor. Shower baths are more sanitary than tubs and there is much less difficulty in taking care of them. Each toilet, shower and tub is in a separate compartment. On each floor is a slop sink, a closet for brooms and pails and one or more linen closets. The second floor also contains a kitchenette, with a gas plate, sink and cupboard for the use of the girls. Either on this floor or in the basement a place will be provided where the girls can do

as much of their laundry work as they wish.

There are bedrooms for six girls on the third floor. There is also an infirmary and a private bath. This room has a cross draft and is in the quietest part of the house. There is a storage place for trunks on this floor. The recreation and dining room wing of the house is one story high. All sleeping rooms are removed from noise and confusion.

The type "B" building is designed for one hundred and fifty girls. It is planned to be a unit of a group in an industrial community. The building is three stories high, with adequate fire-escapes. The entrance is attractive and homelike, with the office on one side. At the left is a large living room, the furniture of which can be arranged to permit privacy in conversation. The girls have an opportunity to receive their friends here in attractive surroundings. The arrangement of the second floor of type "B" is the same as type "A." The third floor is the same as the second floor, except that the end of one wing is used for an infirmary, with seven or eight beds.

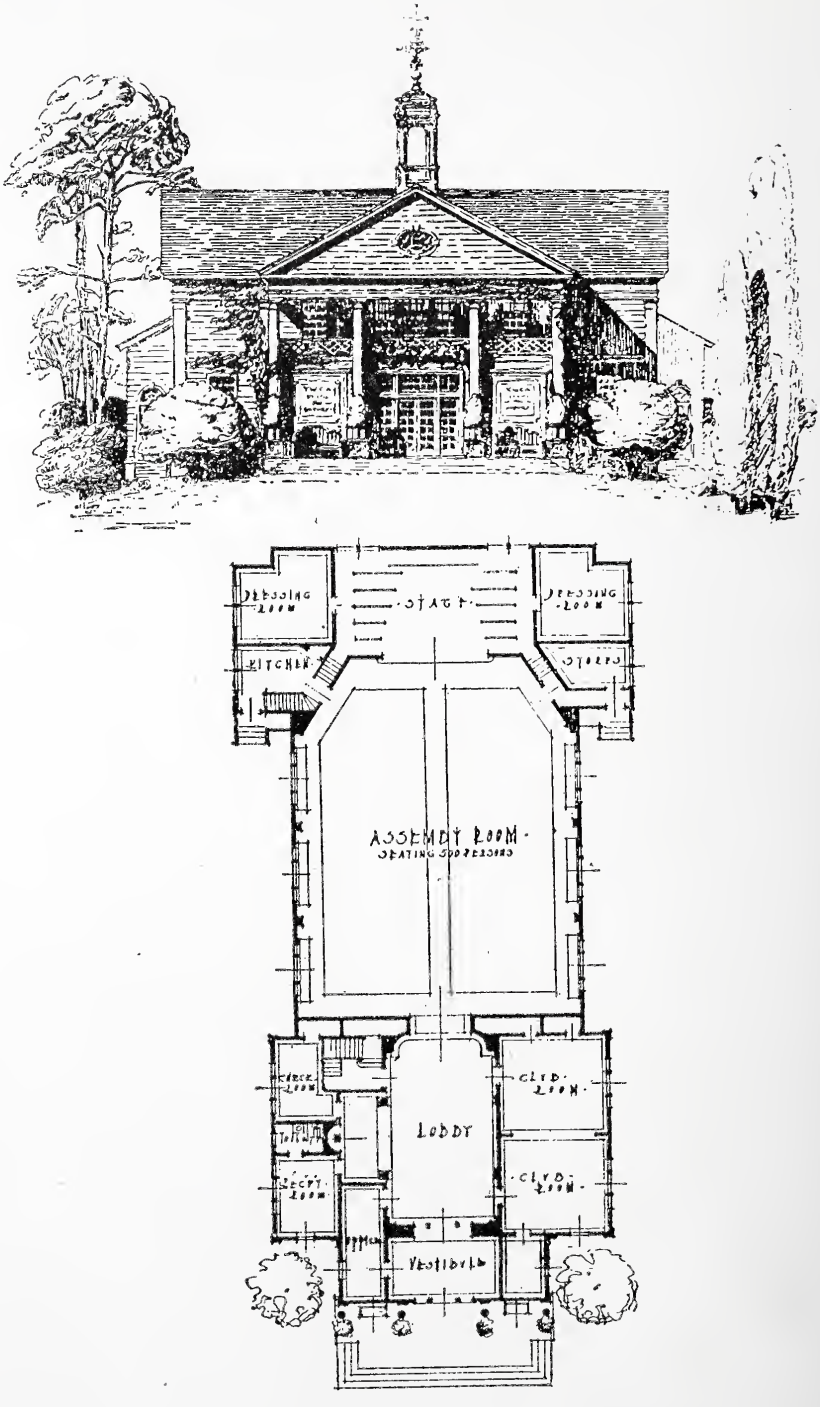
The kitchen in both type "A" and type "B" will have ranges placed back to back on a cement foundation and covered by a hood pierced by flues. The cement foundation will extend two feet in front of the range on each side and will be covered with a wooden rack for the employees to stand on. The working tables will be of hardwood, with steel tube ball base legs and wooden top bound with steel, with drawers and shelves underneath. They will be placed six feet from the range. A rack and hooks for holding cooking utensils will extend over the entire length of the working table, at the end of which there will be a small sink and running water. The refrigerator, or possibly a double battery of refrigerators, back to back, can be filled from the outside. Sinks will be placed to get direct daylight, and will be thirty-eight inches high, with wooden or galvanized iron drainboards attached with sufficient pitch toward the sink to be effective.

Too much emphasis cannot be placed on recreation. No matter how comfortable and attractive the living quarters may be, the girls will not be happy and contented unless there is adequate provision for social and recreational life. Therefore the Recreation Building, planned to be the central building for a number of units of sleeping and eating quarters, contains a large assembly room that will hold about five hundred persons. There is a built-in stage at one end, with dressing rooms on either side. There is also a small kitchenette which can be used for serving light refreshments at parties. Under the stage is a storage place for chairs, so that the floor can be cleared and used for dancing and other group games. A small office and a place for checking coats are near the entrance. There is a small reception room back of the assembly hall. There are six clubrooms, four of which are on the mezzanine floor.

Where so many girls are living together in groups there is unusual opportunity for educational work of all kinds. This gives an opportunity also to make American citizens out of foreign girls, to teach them English and to give them the same advantages that the men of their families are getting in the camps.

In industrial communities the buildings will be grouped as effectively as possible with due regard to natural advantages. There can, of course, be as many units as are necessary. There will also be a number of three and four-family houses to accommodate the older women and the non-English speaking foreign girls. In all cases it is desirable that the Recreation Building should be on higher ground than the rest. In all of these buildings an attempt has been made to use a style of architecture which is distinctively American.

Type "C," the four-family house, is designed for the use of four groups, either of older women who wish to live independently, or of non-English speaking foreign girls. Each apartment has a bathroom, a large combination kitchen and living room and three bedrooms. Each bedroom is large enough for two people. The groups of people in these

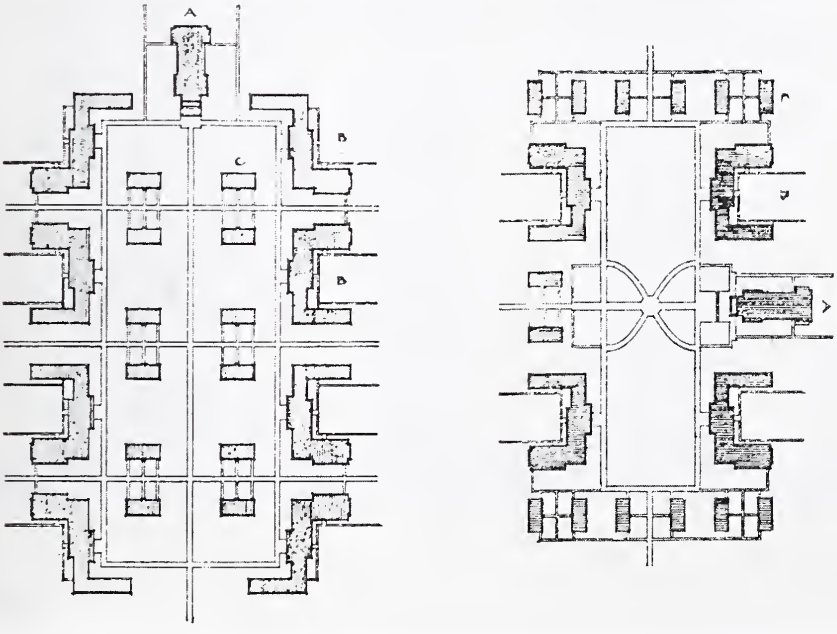


RECREATION BUILDING, INTENDED FOR USE
WHERE A GROUP OF HOUSES IS PLANNED.

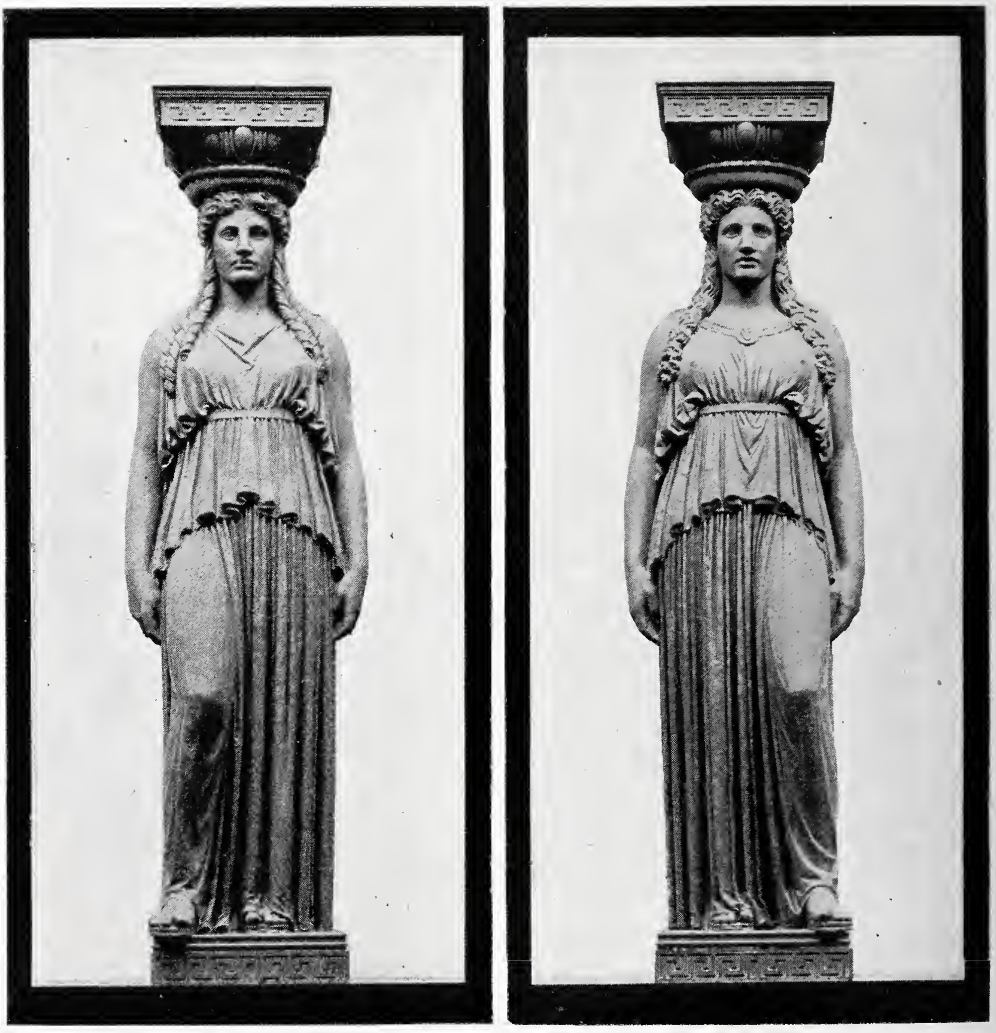
houses will live independently, providing for their own meals and housekeeping.

It is believed that building units of not more than one hundred and fifty girls are most successful. Larger units mean greater difficulties of management and supervision. The minimum number of a group should not be less than seventy-five. Houses holding less than this number cannot be self-supporting on the amount of board that the girls can and should pay. It is essential that these houses be completely self-supporting.

When England adopted a somewhat similar plan of housing to that now being undertaken by the Y. W. C. A., she found that she had helped to solve the labor problem, and in the munition factories, where they are housed in small groups, there is no question of restless, dissatisfied employes, and the production of those factories is greatly increased.



PLOT PLANS OF A LARGE AND A SMALL GROUP OF HOUSING FOR WOMEN WAR WORKERS.



CARYATIDS — FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



HENRY HERING'S SCVLPTVRE FOR THE FIELD MVSEVM OF NATVRAL HISTORY IN CHICAGO

BY

CHARLES OVER CORNELIVS

CONCEIVED in the mind of a public-spirited citizen, and made possible of realization by his generosity, the Field Museum of Natural History in Chicago stands as a memorial to Marshall Field, its founder, and constitutes one of the chief architectural glories of the city. This great museum is destined to house extensive collections associated with the natural sciences and will function as an immense educational concordance. Easy of access from all parts of the city, overlooking the great open space of Grant Park to the north, and visible in its white majesty from far out upon the nearby lake, its site is unrivaled as a dignified and appropriate setting. The design has called forth a sustained architectural study with all that this implies, and the architects, Graham, Anderson, Probst and White, have given to the country a masterpiece in monumental building of a distinction and dignity commensurate with its purpose and origin.

The monumental sculptures created in conjunction with such a building form an essential element in its design. Their position, while not necessarily structural, is in a vital spot of the organism, esthetically considered, and the individual works themselves thus assume a responsibility for the success of the whole work altogether out of proportion to their size, since in them is the final focusing of the attention of the spectator.

The larger part of the exterior sculptural decoration of the building has been concentrated about the central motif of the north façade—the great Ionic portico with its flanking bays. In these two bays caryatid porches rest upon the basement course and above are horizontal panels of low relief. Against the attic of the portico are eight figures of colossal size, which complete the sculptural decoration here. On the south façade the caryatid porches are repeated and above them are horizontal panels similar to those facing the north. The interior sculpture consists of four figures surmounting engaged columns at either end of the central hall. This, then, summarizes the decorative sculpture—the caryatids and the four relief panels, the eight attic and the four interior figures.

For the sculptural embellishment the architects commissioned one sculptor to execute the whole of this decoration—perhaps the second time on record that so extensive a task has been entrusted to the hands of one American sculptor. Henry Hering has utilized the opportunity presented him to create a group of architectural sculptures which is unsurpassed in America today. Throughout the work he has kept consciously before him the purposes for which each piece was designed, both as regards its subject and its placing upon the building, with the result that he has achieved a superlative consistency in the whole work, at the same time infusing into each figure the utmost individuality and distinction.

In the treatment of the caryatid figures there is observable a greater conventionality and a less definite expression of personality than in any others of the group. Here an actual structural problem had to be met and a nice transition from the strong foundation course was desirable. There are two types of caryatids which are to be duplicated, and while they are very similar in mass and movement, in detail they are absolutely individual. The inspiration is frankly Ionian and their dignity is as unquestionable as is their structural quality.

Above each caryatid porch the horizontal panel in relief represents one of the four main departments of the Museum—Anthropology, Zoölogy, Botany and Geology. The treatment here is very decorative, and by the use of one flying figure in each panel the same scale as that adopted in the other figures has been preserved while admitting the introduction of a definitely horizontal sense into the whole panel, contrasting effectively with the repeated verticals of the other figures and of the surrounding architecture. Interesting color is given by the wings, the drapery treatment and the floating ribbon which bears the name of the department symbolized in the figure. The length of the panel has also allowed of the introduction of vertical bands of exquisite decoration, each different in detail, though similar in general tone. The iconography of the four panels is exceptionally pleasing and the choice of symbols for each has brought into play the originality and discrimination of the sculptor.

The choice of subject for the attic figures exemplifies the generalization appropriate to the decoration of such a building. The four central figures above the columns represent the elements: Fire, Earth, Air and Water; the four flanking figures typify the four points of the compass: North, South, East and West. With this choice of subject comes the necessity of giving to the figures, each so general in its conception, definite and essential qualities and certain attributes which will differentiate each from the other and at the same time preserve the unity of the scheme. Of the attributes given to the figures their selection has been so apt and their display so nice that no discussion need be entered into to add to their clarity.

The subtlety of so large a group fairly escapes expression in words. A broad balance has been obtained for the whole by reversing the poses of the two end figures and the similarity in the poses of the four centremost figures. The light and shade have been studied for their effect in diffused light, and calculation had to be made for the position sixty-five feet above the spectator. In the placing of the figures in relation to the surrounding space, as in fact throughout most of the architecture of the building, the Greek rhythm of 1 :2 has been observed.

While in the sculptor's treatment of the group there is this rhythm, this subtle balance and calculation of light and shade, there is withal a very correct uniformity. The decoration about the heads has a certain general similarity in its suggestion of a nimbus, but how infinitely varied in its detail and individual in its application! In all the figures the law of frontality is strictly observed; a knee may be bent or the head inclined, but the frontal line remains straight. The dress, although partaking more of the quality of costume than of drapery, shows in its treatment a reasoned use of the latter tendency with the Dorian chiton as a point of departure. The architectonic quality is also observable here in the insistent verticals of the folds with their suggested evolution from a columnar form. The details of costume are infinitely varied, and upon repeated examination the figures reveal great fertility of invention and richness of detail.

Much of the finest characterization has been reserved for the heads, in which the varied treatment of the eyes and mouth, the most expressive parts of the face, epitomizes the calmness or passion, the mysticism or nobility associated with each generality which the marble strives to present. The sculpturesque form in which the hair is cast in the figures of the "Four Points of the Compass" is particularly fine, and this interesting con-



ANTHROPOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.

ventionality serves to give strength to the neck, a point which may also be remarked with reference to the caryatid figures.

The four interior figures are placed in the great central hall of the museum. This immense room, two hundred feet long and lighted from above, is entered from either end through a large arch. Each of the arches is flanked by tall engaged columns, with entablature decoratively used, and upon each stands a symbolic figure. The symbolism of these figures makes a subjective application of the building's use and suggests the various activities whose inspiration will lie within its walls; Natural Science and the Dissemination of Knowledge flanking one archway, Record and Research the other.

These figures appear first at a great distance and are placed where they will be seen under a comparatively steady light from above. Their position is of no structural importance and their purpose is a purely decorative one. All of which facts contribute to the difference in treatment from the strictly architectural figures of the attic. The composition here is more varied and the feeling more personal.

The whole group is characterized by the eminent dignity and restraint which run throughout all of Mr. Hering's work —a dignity unfettered by academic formulae nor yet disturbed by a factitious realism. In the sane mind of the trained sculptor these two extremes of classicism and realism have been fused into an expressive whole under the spell of his own individual approach. In this particular problem there was opportunity for a variety of treatment into which has been breathed much of the spirit of ancient Greece.

There are many who will concur in the opinion that the art of sculpture has reached and always will reach the broadest expression of its purpose when conceived and carried out with relation to architecture which it may be designed to enhance. Of the greatest sculpture which has come down to us from the past, by far the larger part is permeated by qualities suggested, if not imposed, by the architectural design of which it formed an essential part. When the art began to be employed upon works not destined as absolute units in an architectural scheme, it is yet the presence of definite architectonic qualities which contribute largely to the high essence of the creation. The presence of such qualities may not in itself be of predominant importance, but with their removal comes an immediate tendency toward a less dignified conception, a realism, natural perchance, and by reason of its very naturalness a thing to be controlled and disciplined.

The time is not yet ripe when we may judge the relative position of the architectural sculpture of today, and particularly that of America, where traditions in art are most conspicuous by their absence, and where such various traditions as have been carried over into the new world from the old are being simultaneously followed in the works of various individuals. American sculpture has sprung from the heads and hands of a few scattered individuals almost in its present growth, for what is a century and a half in the development of an art from the first dawn of its heralding in a new land? The largest opportunity for the development of such American sculpture must lie in the category of monumental work for public or semi-public possession.

In such work there must be a greater generalization, since its impression is made upon a myriad different minds and must in each call forth some answering response, and it is just such an opportunity as this which is presented in the Field Museum.

In his appreciation of this opportunity, Mr. Hering has created a distinguished group of sculptures of an inspiration sustained not only in the broad, general conception of the work, but throughout the infinite variety of the detail, a group which can only be recognized as one of the most important contributions to American sculpture.



ZOOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



GEOLOGY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



BOTANY—LOW RELIEF PANEL FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



FIRE—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



EARTH—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



AIR—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING SCULPTOR.



WATER—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



NORTH—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



SOUTH—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



EAST—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



WEST—ATTIC FIGURE FOR FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



SCIENCE—FIGURE IN CENTRAL HALL OF FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



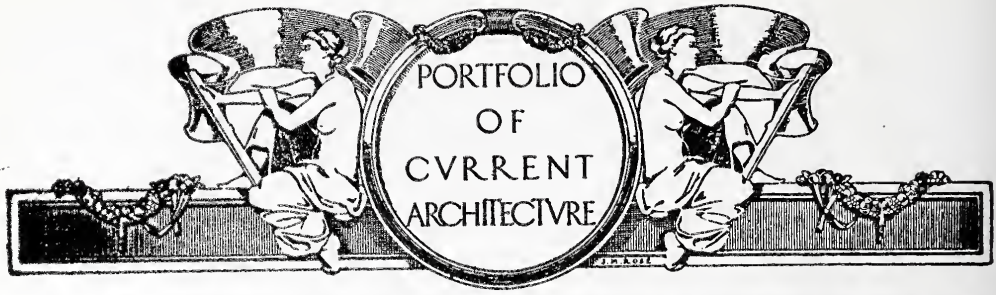
THE DISSEMINATION OF KNOWLEDGE—FIGURE IN CENTRAL HALL OF FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.



RESEARCH—FIGURE IN CENTRAL HALL OF FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.

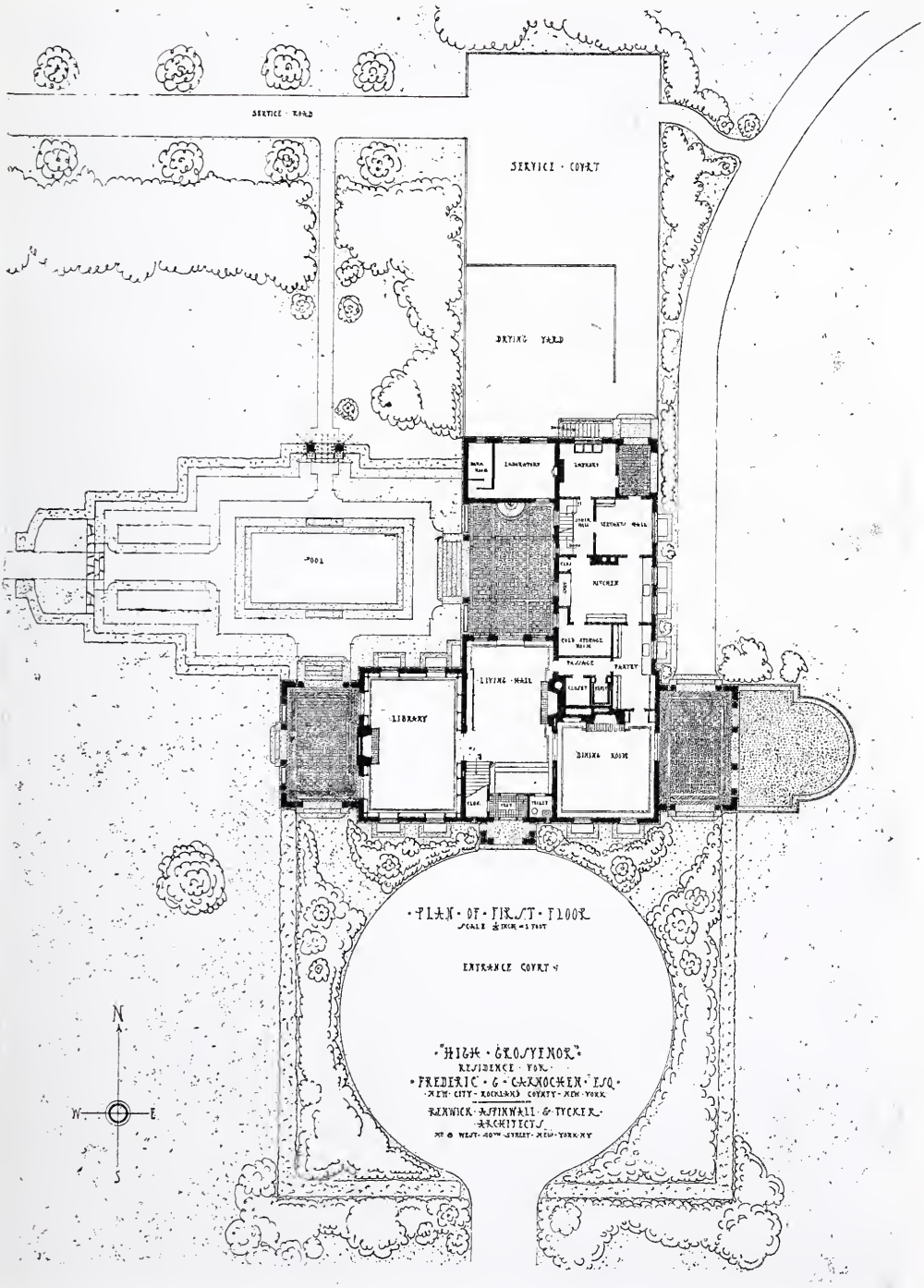


RECORD—FIGURE IN CENTRAL HALL OF FIELD MUSEUM OF NATURAL HISTORY, CHICAGO. HENRY HERING, SCULPTOR.





ENTRANCE FRONT—RESIDENCE OF FREDERIC G. CARNOCHEN, ESQ., NEW CITY, N. Y. RENWICK, ASPINWALL & TUCKER, ARCHITECTS.



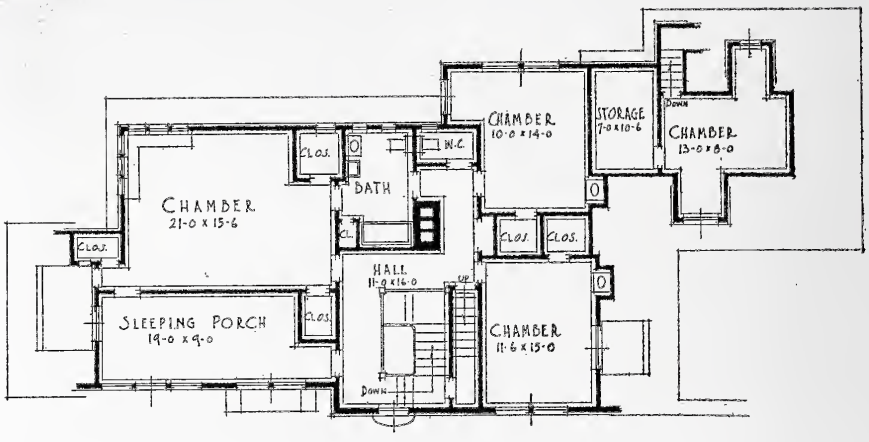
GROUND PLAN—"HIGH GROSVENOR," RESIDENCE OF FREDERIC G. CARNOCHEN, ESQ., NEW CITY, N. Y. RENWICK, ASPINWALL & TUCKER, ARCHITECTS.



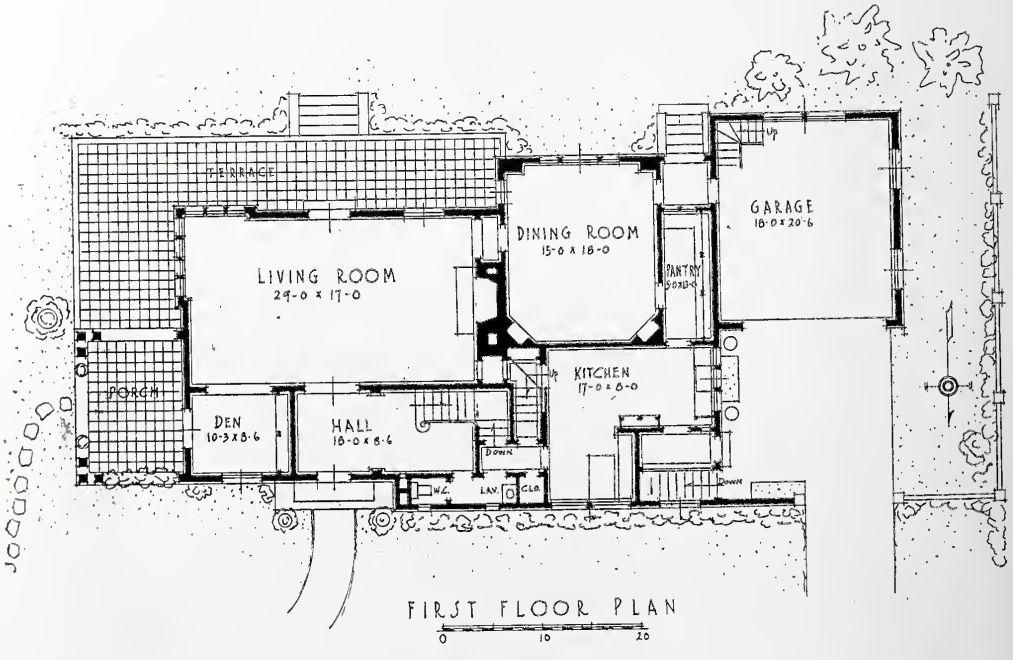
RESIDENCE OF FREDERIC G. CARNOCHEN, ESQ., NEW CITY, N. Y RENWICK, ASPINWALL & TUCKER, ARCHITECTS.



RESIDENCE OF FREDERIC G. CARNOCHEN, ESQ., NEW CITY, N. Y. RENWICK, ASPINWALL & TUCKER, ARCHITECTS.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

FIRST AND SECOND FLOOR PLANS—RESIDENCE OF PAUL C. MURPHY, ESQ., PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



RESIDENCE OF PAUL C. MURPHY, ESQ., PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



STEPS TO OVERLOOK ON HOGBORNE HILL, FRANKLIN PARK, BOSTON, MASS. FREDERIC LAW OLMSTED, SR., LANDSCAPE ARCHITECT.



VIEW OF THE PLAYSTEAD, FRANKLIN PARK, BOSTON, MASS.

The WORK OF OLMSTED BROTHERS

By John Taylor Boyd, Jr.

PART I

THE name of Frederic Law Olmsted means in landscape architecture what the name of Charles F. McKim means in architecture. For just as the designs of McKim—bold in conception and exquisitely perfected in details—helped determine the course of architecture in its recent quick development of twenty-five years, so also over a generation earlier the parks and grounds laid out by Olmsted set standards that are largely the basis for landscape work today. Since Olmsted's death his sons have continued in the great tradition of their father. The work of the elder Olmsted is significant not only as the effort of a powerful personality in the art of landscape architecture, but also because of his relation to the art-history of America and his contact with many of its prominent figures. American art had come near dying with the end of the period of post-Colonial art about 1825, and Olmsted was one of those to bring it to life again in the last half of the nineteenth century. As we all know, architecture itself was at a low ebb during that time, sunk as it was in Victorianism, from which state it did not emerge until the very end of the century. That landscape architecture did not go into eclipse along with architecture and the other—what may be called the more formal—arts is not strange.

Americans have always cherished natural landscape. They have a love of wild or half-tamed nature beyond most modern peoples. It is a fact that is evident when Thoreau's landscape descriptions, which may seem somewhat trite to us, come as revelations to many a European. Among nineteenth century intellectual circles in this country the influence of Wordsworth and other contemporary English poets and of Ruskin stimulated the native characteristic. Still another proof of the American interest in natural landscape is that in this period the really great landscape works of the painter Inness were produced. Frederic Law Olmsted shared the twofold interest of his countrymen in landscape beauty, for he was at once a well-known figure

in literary circles of New York and Boston and a gentleman delighting to be outdoors in the country. Indeed, it is a curious fact that his early life ran largely in these two channels, and that only accidentally Mr. Olmsted became a landscape architect at the age of thirty-five; an active varied life giving him an almost ideal training for this profession.

He was born in Hartford, Connecticut, in 1822, of a good family of ample means. The Olmsteds were among the first settlers of this part of Connecticut, their progenitor coming from England in 1632. In the course of his education young Olmsted entered Yale, but trouble with his eyesight forced him to leave the University. He next attempted engineering. Here ill-health caused another change, this time to farming, which he mastered thoroughly through an apprenticeship on five different farms. Life outdoors brought better health to Olmsted, and he decided to try a career in business. First, it was a drygoods store in New York; then, a publishing firm, in which latter he became a partner and the London representative of the firm. Through his activity as a publisher he seemed definitely to have decided upon literature as a life work. In England he bought books for the house, and came to know many eminent men there. From his headquarters at London he made frequent trips, sometimes to Paris, but more often into the English country, where he might indulge his fondness for landscape. This was a great hobby of his, and all unconsciously by this study he laid the technical foundation for his future profession of landscape architect. Both as a youth and as a farmer Frederic Law Olmsted had tramped and studied scenery along the beautiful valley of the Connecticut around Hartford. The Connecticut flows through one of the best landscapes of the river type, with soft meadows and elm-lined shores. Beside its banks he found his taste in the love of natural landscape, and fortunately he was able to command the leisure to develop that taste. It may be guessed that this instinct was ripened in England; that an eye already trained among the hills and vales and the white, well-set farmhouses of Connecticut could appreciate keenly the beauties of the English countrysides.

Mr. Olmsted returned to New York, again to farm, this time on Staten Island. There was another trip to Europe, during which he sent back letters to the New York *Times*. Journalism became a third pursuit to be added to publishing and farming. Olmsted came back to America again and, in the excitement of the anti-slavery agitation just before the Civil War, he made a thorough journey in the South and wrote his account of it in letters to the New York *Times*. These letters, published in a book, the "Sea-Board Slave States," are even to-day considered one of the few authentic records we possess of ante-bellum conditions. In them Olmsted surveyed the economic situation under slavery with the practical knowledge of a skilled farmer, the common sense of a man of affairs, and with the ripened wisdom of a man of the world and of letters, for he was all these things. He came to the conclusion that slave labor was generally so ignorant and inefficient that its economy was doubtful. Later on Olmsted made still another journey, this time to Texas, again with the result of a book.

I stress the literary activity of the elder Olmsted because, although it may not seem pertinent to his work as a landscape architect, it was really one of the chief causes of his professional success. In a direct way it was a precious preparation for the numerous reports and articles which he wrote in support of his projects. All his life he wrote copiously to persuade a sceptical public of the worth of landscape beauty; and where he could not establish the artistic value of a design, he usually could uphold its practical value. His was the work of a pioneer to a great degree, and all pioneer work needs publicity if it is to win quick acceptance. It is impossible to estimate how many years would have been lost to the growth of American landscape architecture—and how many fine park designs—if Mr. Olmsted had not known how to wield his pen so skillfully in support of his pencil. Furthermore, loving



THE RIVERWAY, BOSTON PARK SYSTEM, NEAR BROOKLINE AVENUE.



LONGWOOD BRIDGE, BROOKLINE, MASS.



THE RIVERWAY, BOSTON PARK SYSTEM, FROM BROOKLINE SIDE.
Frederic Law Olmsted, Sr., Landscape Architect.



THE TENNIS COURTS IN ELLICOTTDALE, FRANKLIN PARK, BOSTON, MASS.



VIEW IN ELLICOTTDALE, FRANKLIN PARK, BOSTON, MASS.



EXPOSED SHORE SITE, ESTATE OF THE LATE THEODORE M. DAVIS, NEWPORT, R. I.
Frederic Law Olmsted, Sr., Landscape Architect.

the life of a literary man in New York as he did, he was always in contact with artists, writers, editors, publishers—some of the most inspiring minds of America and of England—an experience which must have broadened and enriched him. In fact, had he not gone into landscape architecture, Mr. Olmsted would doubtless have remained a literary man, probably an editor. As an amusing incident, it is related that the father of Stanford White brought his young son to Mr. Olmsted to pass on the boy's fitness to become an architect. All in all, when one realizes the variety and richness of the experience of a man like Olmsted, one may justly inquire whether the intense specialization of our modern formal professional education does not cramp us a little, and whether some such corrective, as Mr. Olmsted's life contained, would not be valuable in supplementing the narrowness of our training. It is well known that the older masters often had the benefit of a varied experience in their life work, and this experience in the cases of men like Velasquez and Rubens and Brunelleschi and Bramante must have had its share in developing their vigorous, unusual personalities.

This understanding of Mr. Olmsted's literary, journalistic and business career serves as an introduction to his professional life as an architect.

In 1857, in New York, a Superintendent of Parks was needed, and Olmsted's friends recommended him as a practical farmer for the position. He was preferred over several candidates and accepted the office. During his superintendency a competition for plans for Central Park was announced. One of the competitors was Mr. Calvert Vaux, a young London architect, who had been brought over to this country by an architect, Mr. Downing, and who had designed the Smithsonian Institution and a part of the Capitol grounds at Washington. In preparing his plans for Central Park, Vaux was troubled by its peculiar topography, so he took Mr. Olmsted as a partner in the enterprise, since the superintendent knew every foot of the ground and knew its landscape. The plan of Vaux and Olmsted was accepted over thirty-nine competitors, and they were appointed to execute the work.

This was Olmsted's entrance into landscape architecture—his first one, for he made a quick exit. The Civil War intervened. How the parallel strikes home today to many architects who are facing the sacrifice of their profession on the altar of Mars! Olmsted was rejected for the army on account of lameness that he had incurred in an accident. However, he gave himself to war work on the Sanitary Commission until his health broke down in 1863. Then he went to California as superintendent of the Mariposa Mining Company, an ambitious scheme that failed, sending Mr. Olmsted back to New York in 1865 for another change—this time finally and fortunately to landscape architecture. But his adventurous spirit he carried with him into the new activity, for perhaps the keynote of his whole professional work was the ceaseless effort to find new fields and new outlets for his profession and to develop them to the utmost possibility.

While Olmsted was absent during the war Vaux had continued to practice architecture in company with Fred C. Smithers, another London architect, who designed the Jefferson Market Police Court in New York. Olmsted went back into the firm to remain five years, until 1870. The fruits of the partnership were Prospect Park, in Brooklyn; Morningside Park, New York, the parks of Buffalo, two parks in South Chicago, and Washington and Jackson Parks in Chicago. These—not forgetting Central Park, his first great work—mark the beginnings of Frederic Law Olmsted's wonderful career that lasted thirty years till his retirement from the firm in 1895.

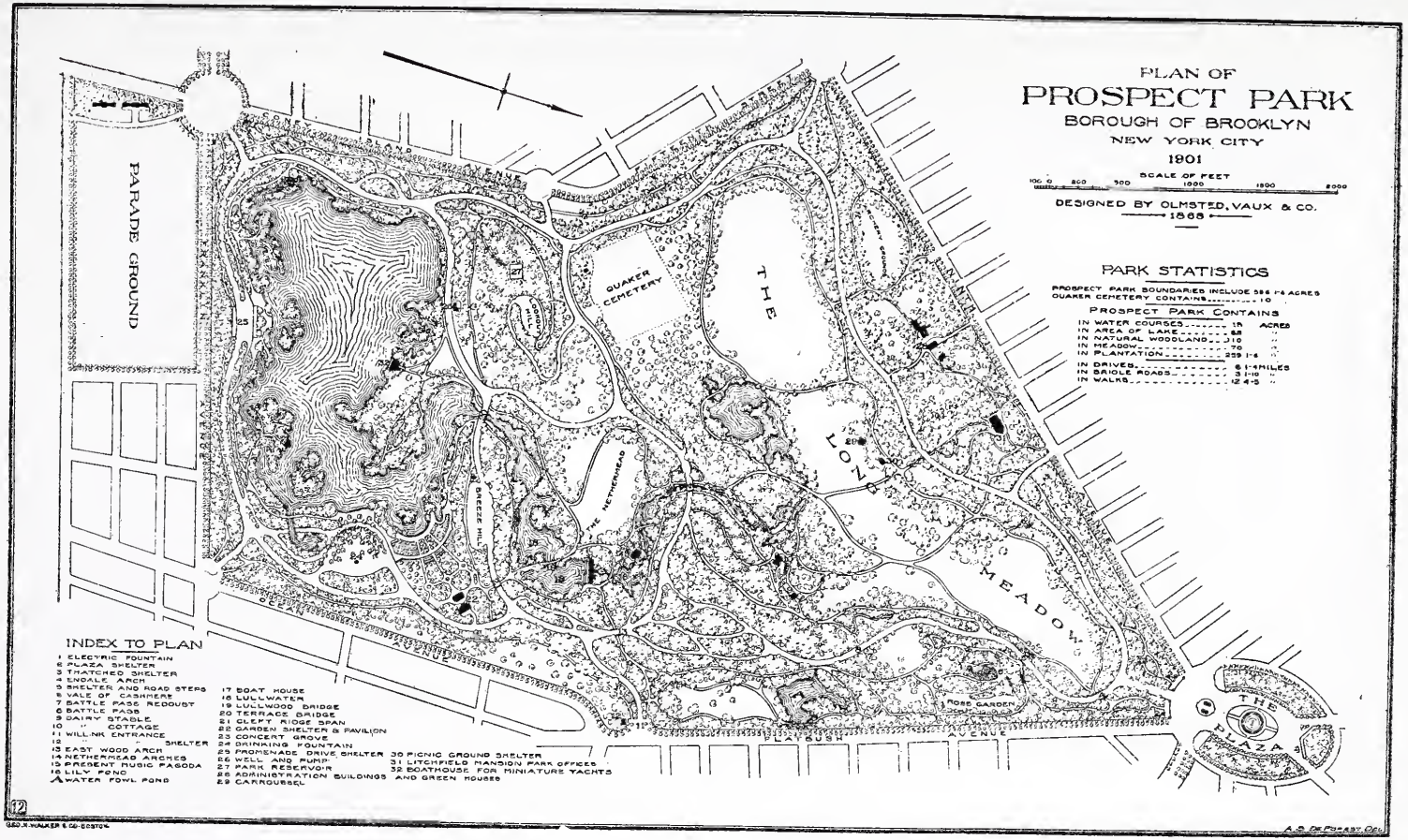
Here a clear understanding of Olmsted's purposes in landscape design becomes necessary in order to appreciate how significant his work is. First and foremost, he was truly a landscape architect—a designer of landscapes. His works are realistic and naturalistic. It was not a case of man remaking nature, casting her in an artificial mold; not the artist using freely the forms of geometry in terraces, parterres, ramps, architectur-

al gardens and sculptural details. Olmsted disliked to force anything upon nature. Especially his naturalistic designs were never improvised out of his mind as *tours de force* or as theatrical stage settings. He never, for instance, tried to create a semi-tropical landscape in a temperate climate. Instead, he purposed to develop and to modify and to smooth out the bit of earth's surface handed over to his skill, disturbing as little as possible its shapes and geological formations, and making full use of the trees and plants already there—as full use, that is, as he could and at the same time accommodate it to the necessities of the human beings who owned it. Yet even here his arrangement of buildings, gardens, lawns, roadways and paths was strictly practical and disturbed the landscape as little as possible. In other words, he fitted his design to the natural conditions of the site as simply, quietly and as harmoniously as possible, rather than fit nature to his design. Thus he aided nature to express herself. It is apparent that Olmsted was conspicuously an Anglo-Saxon in his practical wisdom and in his poetical love of outdoor nature. His was not the Latin ideal of a luminous, abstract conception, intensely humanized and geometrical, nor was it the arbitrary mechanical preconceived formula of the German. And, while he had a remarkable sense of composition it was expressed in naturalistic elements without any apparent artifice about it; and it did not contain any of the intense ideas of decoration, or of symbolism, or of exaggerated expressions of a personality that characterize much recent art.

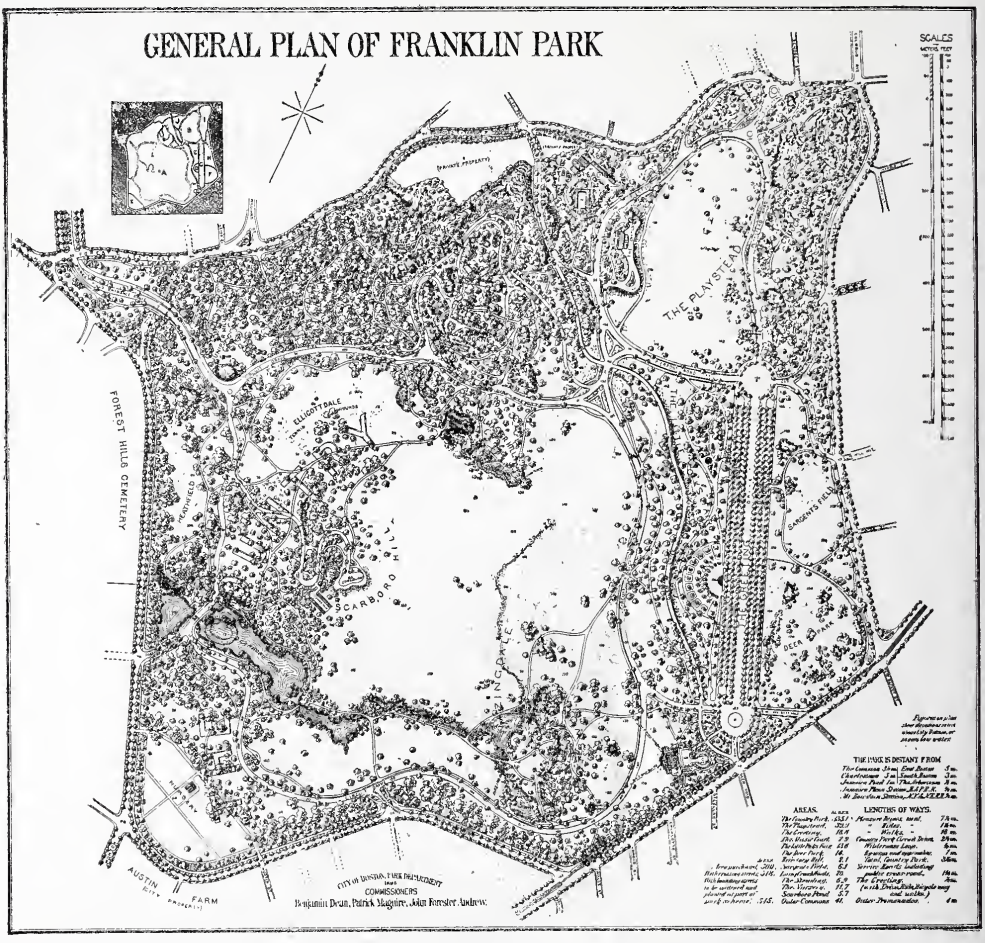
One point should be brought out about the elder Olmsted. He was not extreme in his naturalism. He realized that man with his necessities introduces into the world orderly arrangements often in geometrical shapes; and he was not averse to yielding to this need on occasion. Therefore, in many of his designs, Mr. Olmsted allotted spaces for formal gardens or terraces, and in his parks he usually planned some one, big symmetrical architectural feature in the public monumental scale of Rome or Paris or Versailles, in the shape of an entrance way or a gathering place. Examples of this recognition of the need of some bit of formal planning to make the change from the geometry of a city to the natural landscape of the country are the Mall in Central Park, a broad avenue or esplanade which ends in a large balustraded terrace to be decorated with tall Venetian masts, fronting on the little lake; the fine entrance to Prospect Park in Brooklyn; and the great boulevard into Franklin Park, Boston, which was never carried out. In parenthesis it might be said that Olmsted accepted such formal geometrical elements of the Latin tradition in somewhat perfunctory fashion; that his heart was not in these features and that he left their details to be worked out by others in his office.

Thus it is clear that, powerful and adventurous as he was, Mr. Olmsted was closely related to the times he lived in. Both as an American and as an Anglo-Saxon of two generations ago he turned strongly to the beauty of nature's landscape. In his day the formal geometrical arts were in eclipse, and only English traditions of love of nature gave any impulse to art, increasingly vigorous as these English traditions became when transplanted to America and stimulated by the influence of Wordsworth and his English contemporaries, and by Ruskin. Mr. Olmsted was further inspired by English landscape designers and writers of the eighteenth century—the school characterized by Repton—and by the simple unconscious beauty and keen sense of form in our early American art that lay all around him where he worked along the seaboard states, especially in his own New England.

I think it is important for Americans to realize what Frederic Law Olmsted's life means in the history of their art-civilization. He was, with the painter Inness, one of the conspicuous few who kept art alive in Victorian times— in the period of rapid material development of the country after the Civil War. He was thus one of the links between the early Georgian work and our recent twentieth century activities. Each of these epochs—our earliest and latest ones—studied over and written about



PLAN OF PROSPECT PARK, BOROUGH OF BROOKLYN, NEW YORK CITY. OLMSTED, VAUX & CO., LANDSCAPE ARCHITECTS.



PLAN OF FRANKLIN PARK, BOSTON, MASS.
Frederic Law Olmsted, Sr., Landscape Architect.

endlessly, are already covered in a formidable list of books. But the public has paid too little attention to the record of the small group in which Olmsted was so prominent, either in regard to the works of this group in themselves, or to its place in American art history. With more interest taken in this so-called middle period, which has hitherto been looked upon as a gap, we may be led to conclude that our art has more continuity of tradition than we had supposed, and that it did not die—even if it did not thrive thereafter—at the end of the first third of the nineteenth century. We have listened perhaps too easily to foreign critics who told us that we had no art of our own, only imitations of European art. Some Germans, including Münsterberg, have encouraged this view with purposes all too apparent, for when they uttered one sentence that decried our poor little wares, it was only to follow it with another telling us what superior ones they had to offer us instead in the precious methods of kultur.

THE CHARACTER OF RENAISSANCE ARCHITECTVRE

By

Charles H. Moore

PROFESSOR HAMLIN, in an article entitled *Renaissance Architecture and Its Critics,* contributed to this journal, a few months ago, comments on my *Character of Renaissance Architecture* in terms that call for some remark, for which I have not until now found opportunity. I write, not in order to vindicate my own thesis as such—which is a matter of no importance—but for the sake of what I regard as right understanding of the subject.

Professor Hamlin names several other writers whom, in common with me, he thinks have misconceived, and even vilified the architecture of the Renaissance; but his strictures are for the most part directed against what I have written. He begins his particular reference to me by saying (page 267):

"Professor Moore, in the Introduction to his *Character of Renaissance Architecture,* after drawing a glowing picture of the religious fervor of the Middle Ages, of which Florence's Fine Arts were an outgrowth and expression, describes the 'Neo-pagan spirit' of the Renaissance which favored and strengthened a growing indifference to moral beliefs'" . . . "The animating spirit of the movement contained much that was unchristian and destructive of high ideals." . . . "Into the service of this luxurious and immoral life the Fine Arts were now called, and of the motives which animate such life they became largely the expression. They were made to 'minister to sensuous pleasure and mundane pride.' In doing this the architects and sculptors turned to the models of antiquity, of a decadent antiquity. But as it was impossible for modern men to 'approach the ancient themes in the spirit of the ancients,' this art of the Renaissance is not wholly spontaneous and sincere; and owing to elements incompatible with the pagan spirit, it became 'an embodiment of heterogeneous ideas and conflicting aims.'

"Turning then to the individualism of Renaissance architecture, he observes that 'architecture of the highest excellence can hardly be produced by an individual working independently,' and contrasts the individuality of the Renaissance unfavorably with that of the Middle Ages, calling it 'capricious and irresponsible.'

"The Italian Renaissance architects worked like painters rather than constructors. Their use of the 'orders' is rarely based on any structural need. 'Columns and pilasters, answering to nothing in the real structure, are disposed with no thought save for agreeable lines and rhythmical spacings.' Renaissance architecture became 'a mere surface architecture, differing fundamentally from all of the great architectural systems of ancient times and of the Middle Ages.' The only wholly consistent and distinctive styles in Europe were the Greek, Byzantine, and Gothic. The introduction closes with laudation of Italian painting, which, unlike architecture, was not governed by a consciously retrospective motive. The Renaissance architecture of Italy was the product of one of those 'periods of partial aberration through which peoples sometimes pass. The noblest forms of art are not an outcome of such conditions.'"

Is Professor Hamlin prepared to deny the truth of any one of these statements? Does he not believe that moral, intellectual and social conditions give character to a people's art and qualify its merits, or that structural integrity is the necessary foundation for any architecture worthy of unqualified admiration? He does not, by reasoned argument, refute these statements; nor does he, by convincing discussion, in any way invalidate my position. Yet he speaks of fundamental "error" in my writings, and charges me with "unfair emphasis," "distortions of facts," and "unverified premises." He ought, I think, specifically and categorically, to point out where in my book he finds justification for these charges.

I suppose, from the general tenor of his remarks, that Professor Hamlin means by unfair emphasis, that I lay undue stress on rational construction as a necessary basis in design, and do not take enough account of the esthetic principle, or what is sometimes called the art, in contradistinction to the mechanism, of building. He appears to hold that there is an esthetic principle of architecture that is independent of structure.*

I believe this to be a fallacy. In living art the structural and esthetic elements cannot be separated. They are parts of one whole. Architecture, I conceive, is only construction exalted by esthetic feeling. Or, in other words, in architecture, as in a natural organism, beauty is inherent in structure—simple or complex, as the case may be—as in the Parthenon, in St. Sophia, or in the nave of Amiens.

When men work naturally they do not violate sound principles of construction, and the beauty of what they do is in proportion to the nobility of the ends they have in view and the measure and quality of their esthetic aptitudes. It is only sophistication that gives rise to architectural aberrations. Herein lies the cause of the difference as to merit between Gothic architecture in its integrity and the architecture of the Renaissance. The Gothic communal craftsman worked without sophistication, in obedience to the promptings of an exalted artistic impulse and with instinctive loyalty to structural law. The architect of the Renaissance was animated by a sophisticated ambition, which brooked no moral restraint and regarded no law of construction that stood in the way of his detached esthetic aim. The one wrought in a spirit of unconscious self-effacement; the other in a spirit of self-assertion. To maintain that works so opposed in spirit can be of equal merit appears to me shortsighted.

Professor Hamlin charges me further with "an evident hostile animus," with "sweeping characterizations," and with "special pleading." Such charges, unsupported by reasoned discussion, have no effect but to excite prejudice—which does nothing but harm, since it tends against due consideration of these questions, and thus to prevent fruitful study. He suggests, too (p. 270), that I am biased by "an atmosphere of medievalism," and remarks that he has tried in a previous article to explain "the error of an attitude which cannot recognize with equal freedom the merits of two distinct kinds of design, proceeding from different points of view, under differing conditions, to different goals." As to a prepossession in favor of medievalism, it is a gratuitous assumption for which there is no justification in the book and no foundation in fact. If I am in error, this is not the way to deal with it. The only effective way to deal with error is by reasoned argument. If Professor Hamlin would help his readers to see what he considers my mistakes and perversions of facts, let him take up, for instance, what I have written about Brunelleschi's use of the orders in the Pazzi chapel, or let him examine, point by point, my discussion of the dome of St. Peter's, or any other portions of my

*This independence of the esthetic principle is affirmed in a recent book by Mr. Jeoffrey Scott, entitled *The Architecture of Humanism*. London, 1914. But Professor Hamlin, in a former article entitled *Gothic Architecture and its Critics* (Architectural Record for May, 1916), endorses the principle that structural character is a primary consideration in architecture and the proper basis for critical estimates of the art. In that same article, however, he negatives the principle in what he says later in support of, what I consider, the spurious Gothic of the Middle Ages—in which the principle is violated.

book. A specific indication of my misstatements of facts and a reasoned exposition of what he thinks my errors of judgment would be more useful than his general accusations, which clear up nothing.

Professor Hamlin is himself in error. My book is not, as he would have it appear, made up of groundless allegations and prejudiced opinions. I have made no adverse criticisms without giving complete and specific analysis, and thus putting the reader in possession of the facts in each case—so that he is at liberty to form his own judgment on rational grounds. He cannot be prejudiced by anything that I say, if he takes the trouble to follow it. In this book, as in my other books, I have endeavored to make the monuments speak for themselves, and not to impose on the reader any bias of my own. This, I think, any attentive reader should see. The strong dissent and impatient resentment that the book has awakened in some quarters arises from the fact that it deals critically with a phase of architecture—the product of a sophisticated epoch—that has been sanctioned by academic authority, familiarized by custom, and to which many architects are today committed; so that it passes without question with people who give little active attention to its character. Its advocates seek to defend it as an outcome of the general emancipation from the alleged intellectual thraldom of the Middle Ages with which the Renaissance movement of the fifteenth century is credited. But this position will not bear examination. In the architectural activity of the Middle Ages—wherever, as pre-eminently in the Ile de France, conditions were favorable to progress—there was no intellectual thraldom, but the freest spirit of invention. Even in Italy, though there was less invention and a stronger force of tradition, there was no hampering bondage, as the Italian art of the fourteenth century abundantly attests. Therefore there was no need for emancipation in the sense affirmed by the partisans of the neo-classic Renaissance. What the Italians needed was only emancipation from their own medieval aberrations, by which they had superficially denaturalized their native architecture. They had done this by engrafting on it incongruous elements borrowed from the Northern Gothic, in the same way as they were now, in the fifteenth century, borrowing the irrational features of the imperial Roman style. It is worthy of remark that the Italians were never true to themselves in architecture, save when they adhered to the pure bascilican type in churches, and to the round-arched, and undisguised, wall construction in their civil and domestic building. In other words, where they built naturally they produced good architecture, and when they affected foreign or ancient methods of design they produced a mongrel art.

In his zeal to discredit me, Professor Hamlin has allowed himself to make groundless aspersions. He does not take the pains to examine carefully and mark clearly just what I have written, but querulously misconstrues it, and implies that I have said what I have not said and should not think of saying. Thus, on page 271, he remarks: "It is futile and unreasonable to find fault with the architecture of one age for not expressing its own spirit by the same means and according to the same standards as that of a preceding age." I have, of course, found no fault with the architecture of the Renaissance on any such grounds. I have criticised this architecture as not conforming to any consistent standards. Like the imperial Roman art, it is irrational and opposed in principles to all the really great historic styles. No apologies for such art will long avail with thinking men of moral sense and true esthetic feeling.

Mr. Hamlin's remarks on the preceding page, that "when . . . of two great periods of the world's thought and artistic activity, one is always and at every point disparaged in comparison with the other, and particularly when it is the later period that is so disparaged, to the denial of the supposed progress of the race, it is fair to inquire whether there may not be misplaced emphasis in the comparison made." To this I may answer that any disparagements of mine

have been supported by fair and full discussion of specified facts, with abundant illustration. Such disparagements cannot be rightly impugned by mere counter affirmations. As for the "supposed progress of the race"—which Professor Hamlin thinks enough to put the merits of Renaissance architecture beyond question—it may be said that human progress cannot be determined by what is supposed, but only by the character of what is produced. There may be progress on some lines and at the same time retrogression on others. The architecture in question appears to me, for reasons that I have abundantly given, not an architecture of progress.

Again, he remarks (p. 270): "So when they (those who question the merits of the neo-classic art) charge the Renaissance architecture with the sins of revolt against Faith and Discipline and Religion, several questions occur. Is it not true that this revolt was inevitable, given the corruption and decay of faith and true spiritual religion in the fifteenth century? If so, does not the fault lie back of the revolt in the system and age that made it inevitable? Was not that revolt a protest of liberty, and was not its consequence that freedom of the mind and soul which has made all progress possible?"

I think the answer to this is, that the idea of a general prevalence of intellectual bondage in the Middle Ages, calling for a protest of liberty in order to free the world for progress, is short-sighted and fallacious. It is true, indeed, that the church as an institution sought to enslave the minds of men to its autocratic rule, and thus in the sphere of religious thought there was thraldom in so far as the church could enforce it. There was thraldom also in the abuses of secular government, which created and maintained apalling injustices. But intellectual activity was not wholly crushed, even in these spheres—as the great communal movements attest; while in the domain of artistic craftsmanship there was never a time when the human mind was more alert, more free or more nobly productive, as the supreme Gothic art of the Ile de France demonstrates.

The architect of the Renaissance had to break no chains of intellectual bondage. He had only to keep himself free from the toils of the humanist sophistries in order to work out in freedom whatever it was in him to do. The liberty sought by the humanist of the fifteenth century was not altogether that of the truth, but liberty to transgress every moral law in the pursuit of mundane pleasures. That was the protest of liberty for which the Renaissance distinguished itself. Keenness of intellect and artistic genius were great; but, save in the art of painting, this greatness, as compared with that of earlier times, has been much exaggerated. In speculative thought it produced few men superior to Abelard, and in creative literature none so great as Dante.

The catholic idea, to which Professor Hamlin, in common with so many other apologists for the architecture of the Renaissance, appeals, needs to be more carefully considered. There are traps in the path of him who would without circumspection make this idea a guiding principle. Catholicity in matters of art does not properly mean that all things should be held of equal value, since all are equally manifestations of human thought and feeling. The catholicity which does not discriminate has no solid basis. Esthetic feeling is not the same with one man as with another, and ideas based on this feeling alone are vague and untrustworthy. The truly catholic temper is, I conceive, one which—weighing good and evil according to its lights—recognizes the good under whatever form. Thus to a catholic mind, the different genuine historic styles of architecture—as the Greek, the Byzantine, and the Gothic—will, notwithstanding their differences, be equally admired to the extent that they are seen to be equally founded on principles of architectural rectitude, of which structural veracity is the basis. This rectitude is, I believe, the touchstone by which all artistic values are to be tested. The esthetic principle is an inner thing that the human mind cannot compass, though every man feels it in his measure. Where it is manifested, the response to its appeal

differs according to individual susceptibility, which depends on temperament and experience and changes with mental and moral growth. Dogmatic affirmations with respect to beauty are therefore both unjustifiable and futile.

I may add a word concerning the remarks of Mr. Edward Lewis, quoted by Professor Hamlin on page 271. Mr. Lewis says "progress is constant," and likens it to the "sweeps of a spiral," some of which, he tells us, may be "long and flat, others shorter and steeper." He appears to forget that the spiral may be reversed, so as to move downward instead of upward. In other words, there may be retrogression as well as progress. It is by no means true that in human affairs "upward movement is continuous and universal." In human affairs there are, as I have said, periods of aberration.



VATICAN LIBRARY—ETCHING BY DEWITT H. FESSENDEN.

The EXPRESSIVENESS OF LIGHT



By M. Luckiesh



IN lighting, attention has been too generally directed toward the artistic grace of fixtures instead of visualizing the light effect upon the room as a whole. If the attention is focused upon effect at all, it is usually upon the purely utilitarian result. Satisfactory lighting is the result of a harmonious combination of scientific and artistic principles. The former principles should be the basis of any lighting installation, but the installation may be concealed amid the draperies of artistic exteriors. No other essential element in the home possesses possibilities so great as lighting, if outlets are well chosen, if science and art are properly harmonized in fixtures, and if the controls for the light-sources are laid out generously and judiciously.

In residences of the highest class the problem of lighting may be disposed of by placing the matter in the hands of a lighting specialist, provided one is available. However, as the full recognition of the possibilities of lighting has barely dawned, there are few competent lighting specialists. Householders of the intermediate class—by far the most numerous class—must of necessity generally be content to call upon the fixture dealer and trust in him. But how many persons distinguish between lighting effects and lighting fixtures, and how many dealers demonstrate lighting effects instead of fixtures? Dealers rarely have rooms equipped for demonstrating the lighting effects of individual fixtures, and fixture salesmen rarely qualify as lighting artists. Lighting effects must be intimately associated in harmony with the general scheme of decoration and furnishing in an interior. The salesman seldom takes the trouble to inquire concerning these, and the householder does not know the importance of correlating lighting effects and decoration. The householder's best safeguard at present is the acquisition of a general knowledge of the possibilities of lighting and the relation of lighting to the other elements of the home.

The esthetic, or, more broadly, the psychological, aspect of lighting effects should have first attention. Light may be considered as a medium similar to pigments. Pigments in wall-coverings are obviously expressive, because the decorator is able by means of them not only to decorate an interior, but to realize a desired mood. Light has a similar expressiveness, but far superior in potentiality; for not only may a certain desired mood be realized, but with appropriate fixtures and controls this mood may be altered in a moment to suit the occasion.

Before discussing this aspect further let us make another inquiry. How much variety in lighting effects is possible in ordinary lighting installations? On pressing the switch we are greeted in most cases by the same monotonous, symmetrical distribution of light, which may account partially for the general indifference to the potentiality of lighting. Variety is the keynote of the attractiveness of nature in general and more specifically of nature's lighting. Outdoors, amid the dominating magnitude of nature, we usually reflect nature's mood, but indoors our mood desires to command. Perhaps in realization of the artificiality, and hence of the controllability, of our interior surroundings we know that it is within our power to make the setting to suit us.

Let us now resume the discussion of the elements which are essential in order

to enjoy the expressiveness of light. First, the wall-coverings should be of a light or medium value and not strongly colored, otherwise the mood of a room is largely fixed; for a redistribution of light cannot greatly alter the values. Of course it is understood that the brightness of a ceiling or wall is a function of the amount of light which falls upon it as well as of its ability to reflect light. Therefore, if the walls are of low reflecting power compared with the ceiling, a great many times more light must fall upon them than upon the ceiling in order to make them appear as bright as the ceiling. If the difference in the reflecting powers is too great, it is not practicable to rearrange the values by means of light alone. Hence medium or light shades are desirable in the wall-coverings if variety in lighting effects is to be realized.

If we have such a room lighted by means of a single central fixture, it is rarely possible to obtain variety except in intensity. Sometimes two circuits are provided, but usually these control similar units, which results merely in a change in intensity of illumination. It is a simple matter to have one circuit control outlets equipped with shades which direct the light downward, and another which controls outlets equipped with a bowl or shades which direct the light upward. Each circuit provides a distinctly different mood or expression, and the two combined provide a third one. By placing tinted lamps or colored media about the lamps which are connected in one circuit, variety in tint is introduced.

Lighting fixtures equipped with two circuits are not uncommon, and occasionally one is found which is so equipped with shades or bowls that two radically different distributions of light are obtainable. A number of different types of excellent portable lamps are also available which possess this desirable feature. It is not difficult to attain this end in lighting fixtures, but it is obvious that two circuits controlled by means of separate switches are fundamentally essential if a degree of variety in the effects is to be obtained.

One of the simplest means of obtaining lighting of the desired flexibility is by portable lamps. The first requirement is a sufficient number of baseboard, floor, and wall outlets judiciously installed. A living room of moderate size should have from six to ten baseboard and floor outlets, so that portable lamps may be placed wherever desired. If some of these lamps are equipped with two circuits controlling upward and downward components of light respectively, it is obvious that a great variety of lighting effects can be obtained.

Wall brackets also have their place in the home, but these should be cautiously utilized. Owing to their position on the walls they are always more or less directly in view, and if the shades are too small and the candlepower of the lamps is too great a discomforting glare will be obtained. Such brackets aid in introducing the element of variety into the lighting of the home, but in general they should be considered as ornamental objects. If not depended upon for the dominant lighting, they may be of low brightness and hence easy to look at.

As the householder learns that lighting is a medium capable of determining the mood of a room and of relieving the monotony of the interior, many dark places will be converted into delightful nooks. A hallway or alcove may be made interesting through a combination of lattice and indirect lighting. For example, a lattice may be hung a foot or two from a coved ceiling and the latter may be illuminated by means of lamps concealed above the lattice. Even artificially lighted windows have been employed with pleasing results. In a dining room of a palatial home a large oval skylight of diffusing glass was placed in the ceiling. Above this glass many red, green and blue lamps were installed in separate circuits and controlled by means of rheostats hidden behind a panel in the wall. Light of any color may be obtained by mixing red, green and blue lights; hence, by means of this installation, an unlimited variety of color and intensity of illumination is obtainable, which makes it possible to adjust the lighting to suit the spirit of the occasion. Although it is

not the aim of this article to discuss the details of residence lighting, but to present a viewpoint which appears to the writer to be the fundamental one from the standpoint of psychological effects, a discussion of lighting of the dining room should further emphasize the expressiveness of light. At one time the dome which hung over the dining table was very popular, but it is no longer generally considered to be "in style." However, from the standpoint of lighting effect, this fixture can not be greatly improved upon. Of course, in lighting as well as in other elements which beautify a home, taste is a factor which eliminates the possibility of formulating specific rules. However, it is generally agreed that the dining table should be the most highly illuminated area in the dining room. There is something conducive of cheerfulness in such a distribution of light, as the semi-darkness hems in the diners and concentrates their attention upon each other and upon the festive board. There is something elemental in such a lighting which harkens back to the primitive joy of the campfire.

The "old fashioned" lighting dome, when properly designed and hung, produced this delightful effect; but neither the modern so-called semi-indirect or indirect fixtures, nor the candelabra fixtures suspended from the ceiling and unequipped with shades for directing the light downward, attain this desirable end. The shower can be made to illuminate the table properly and leave the remainder of the room in a warm glow of semi-darkness, but care must be exercised in selecting the shades in order to avoid glare. Ofttimes the simple things in lighting are very important; for example, the shades of a shower should be deep enough, and preferably should turn inward at the bottom or open end, in order to shield the lamps from view. A general principle, for the installation of dining room fixtures supported above the table, is to hang them lower than other ceiling fixtures are ordinarily hung if they are of the type which direct the dominant light downward.

In the dining room, as in other places, the element of variety in color and distribution of light is welcome, and it is not a difficult matter to design a fixture possessing two circuits which respectively control upward and downward components. As already discussed, these two components may be used singly or simultaneously and the upward component may be tinted as desired. Wall brackets may be used for decorative effect, but it does not appear that it is desirable to depend upon them for the lighting of the table or even for furnishing a great amount of light. This also applies to cove lighting; but these and other schemes may be used as accessories with good effect.

A discussion of the possibilities of color in lighting may be presented fittingly in closing this subject, for these possibilities have barely been tapped. Of course, color has played a part in the lighting of the home through silk shades and tinted glassware, but it is not always convenient to utilize the charm of tinted light by these means. It is a simpler procedure to use tinted lamps, especially when an effect upon the room as a whole is desired.

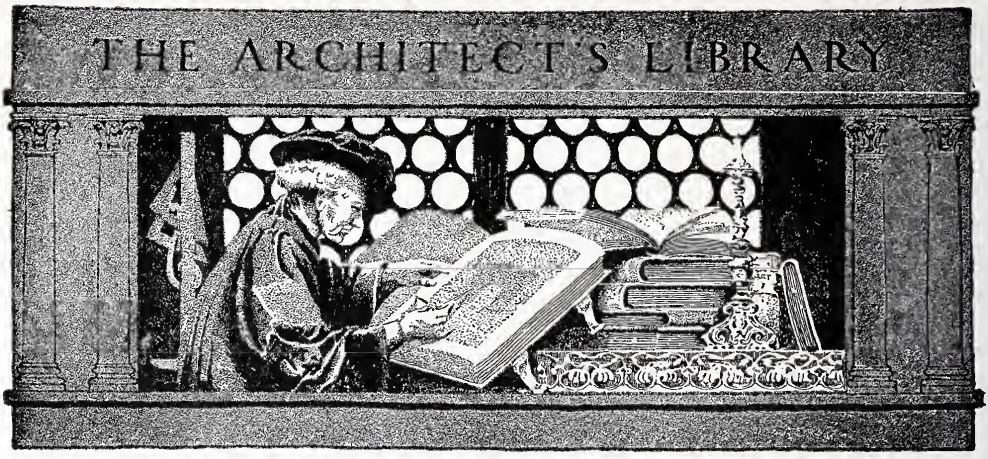
Strongly colored light has little application in lighting the home; in fact, only the delicate tints are satisfactory for general illumination. These are well described as tints which are felt rather than seen; in other words, the householder should be conscious of them only through the subtle influence of the "atmosphere" which they provide. In general the warmer tints are the more satisfactory. There is no reason, however, why, for special occasions or in the summer time, the psychological effects of the colder tints should not be utilized. There is more or less dissatisfaction with the whiteness of modern illuminants for esthetic lighting in the home and a consequent desire to obtain illuminants of a warmer tint more nearly approaching that of the candle flame. Such an illuminant may be obtained very efficiently by tinting the bulb of the modern incandescent lamp, but an ordinary amber color will not properly simulate the color of the older illuminants. The trend in lamp

development is in the direction which will satisfy the desire for tinted light, and especially for the warm yellow light of older illuminants.

Obviously with such lamps available the householder would possess another means of injecting variety into lighting, of adapting the light to the room, of providing the appropriate effect for any occasion, and in general would be able to extract much from lighting which is ordinarily difficult or even impossible. In applying such illuminants the same principles are followed as those which guide the use of pigmentary colors. For example, only the lighter tints are satisfactory for permanent general illumination; but inasmuch as we readily become adapted to a single color, a contrasting color may be utilized as a vital spark to keep the general tint alive. Color lives through contrast and dies through lack of it, and therefore in attempting to utilize the charm of color in lighting this important law of color should not be ignored.

To summarize this entire viewpoint of lighting, the metaphorical phrase, "painting with light," appears most appropriate. This does not include only the tinted lights, but also the distribution of light which determines the general arrangement of light and shade or values. The broadest and perhaps the simplest concept of lighting from the decorative, esthetic or psychological viewpoint is to consider light as a medium which, guided by the artistic instinct of the lighting artist, is capable of casting over an interior a magical drapery of light, shade and color of far greater potentiality and mobility than the medium employed by the decorator. Every householder capable of decorating and furnishing a home artistically is capable of extracting from light some of its potentiality.





WAR BOOKS OF THE CATHEDRALS

By BARR FERREE

Part IV.

A GREAT wealth of information on Reims is contained in the *Almanach Matot-Braine* for 1915-1917. It is concerned with the three departments of the Marne, the Aisne and the Ardennes. Abundantly illustrated with views, portraits and maps, and including numerous articles by specialists, it is a veritable encyclopedia for this sorely tried portion of France for the period of which it treats. Albert Baudon contributes a chapter on the losses in monuments and works of art in the Marne; Camille Blondiot gives a sketch of the monuments of the Marne after the battle; E. Kalas writes of the youth of Jehan d'Orbais, the architect of the Cathedral of Reims, an interesting and successful picture; R. de Baubontal, in a chapter entitled "Reims, the martyred city," reviews the first bombardment of September 4, 1914, the occupation by the Germans, and the events of the dreadful day of September 19, when the cathedral was set afire; a valuable chapter on the former abbey of St. Remi is written by Henri Jadart, the honorary curator of the Library and Museums of Reims, whose constant writings have done so much to preserve the knowledge of his beloved city; the question of the restoration of the cathedral is discussed by Louis Demaison; and other chapters are concerned with life in Reims during the war, Reims as a place of national pilgrimage, a list of the clergy of Reims honored in the war and other topics. In addition to many interesting chapters on adjacent towns, considerable space is given to the cathedral city of Châlons-sur-Marne, including a sketch of the churches, damaged through the war in the diocese of Châlons, by the Abbé Hurault, and the history of the hospitals of Châlons, during the German occupation in 1914, by Dr. Chevron.

A lifelike picture of experiences in Reims just before the German occupation is given by Isabelle Rimbaud in her *Dans les Remous de la Bataille*. Mme. Rimbaud's home was in the Ardennes, and the earlier chapters of her book deal with events in and around it, and illustrate, in an astonishing way, the hesitancy of the French to leave their homes even when the approach of the Germans seemed inevitable, as indeed it was. Naturally her flight with her family was attended by many hardships because of this procrastination. But once in Reims they found shelter with a friend. From this refuge Mme. Rimbaud saw much of

the beginnings of the siege of Reims, which she describes in graphic pages. She left Reims just before the cathedral took fire, but records many impressions of the first days of its demolition.

Mme. Rimbaud presents life in Reims as seen from within the city. Henri Libermann, in his book *Ce qu'a vu un Officier de Chasseurs à pied,* treats of the city from without, being engaged with the French forces from the beginning of the war, and taking part in conflicts around Reims in September, 1914. Of the many books on Reims his is the only one, as yet, dealing with events in the French army just outside the city.

A great variety of topics, literary and artistic, are discussed by Péladan in *L'Art et la Guerre.* The book, for the most part, is made up of articles contributed to various French reviews, here conveniently gathered into one volume. Arras, Reims, Soissons, Laon and Noyon, to name only the cathedral cities, are referred to, but the chapters on Reims are the most notable. The author makes the point that sufficient care was not taken to preserve either the glass or the sculptures of the cathedral, and argues that even the heavy statues should have been taken down and put into places of safety. Now that so much irreparable damage has been done, it would seem as though some effort in this direction might have been made. But no one imagined, at the outset of the war, that the Germans would take delight in destroying so great a work of art as the cathedral of Reims; and the national and city authorities were so overwhelmingly engrossed with the horrors of actual combat that it is perhaps hardly just to censure them for doing nothing. But the arguments of Péladon have not been without results, as the famous statue of Jeanne d'Arc by Paul Dubois, before the cathedral, has only recently been removed, after withstanding a bombardment of nearly four years. The sâr Péladan, the author of these papers, was a notable figure in the literary life of Paris; he died at his home near that city on June 27, 1918.

Some interesting chapters on life and events in France during the early period of the war are contained in *Sur les Routes de la Victoire* by a Swiss journalist, William Martin. Much of the book originally appeared in *Le Journal* of Geneva. Visits to various cathedral cities are described: Bourges, Meaux, Paris, Le Puy, Reims and Verdun; but the cathedral of Reims alone receives special mention. At Le Puy he visited the camp for imprisoned German officers, a strange thing to find in this astonishingly picturesque place. He reminds his readers of the splendid cathedral at Bourges, but his greater interest is for the munition works which now completely dominate that once quiet city.

A chapter on Senlis and others on Reims forms a part of the contents of *Petites Images du Temps de Guerre* by André Warnod, embellished with numerous sketches by the author. Sermons preached in Lyons by the Abbé E. Sirech, chaplain of the Lycées of Lyons, supply the text for *Le Martyre de la Cathédrale de Reims et son Bourreau.* Chapters on Reims find their place in *Ste. Geneviève et l'Invasion Allemande en 1914* by J. Sauvétre, Curé of the church of St. Etienne du Mont in Paris. *La Cathédrale de Reims Livrée aux flammes par les Allemands* by G. Eyssautier reproduces lectures given in Marseilles in 1914. *Une Cathédrale endormie* by G. Desdevises du Dezert is a brief discussion of the problem of the restoration of the cathedral of Reims. *Over the Threshold of War* by Major Nevil Monroe Hopkins, somewhat over-sumptuously printed, contains some facsimiles of proclamations issued by the German command in France. One of these, dated September 12, 1914, was issued at Reims, and threatened the hostages with death in the event of the least disorder.

Dr. Simonin's book, *De Verdun à Mannheim,* is very largely concerned with his experiences as a prisoner of war in Germany. As *Médicin-Inspecteur de l'Armée,* he was entitled to some special consideration as an officer of high rank; while as a former professor attached to Val de Grâce in Paris, he was regarded as a person of distinction by the Germans. He experienced, therefore, none

of the hardships of the ordinary prisoner, and the lists of foods he gives seem not unpalatable. While at Mannheim he had free access to the German newspapers, and some of the most interesting pages of his book reproduce translations of contemporary German accounts of the burning of Reims cathedral. These extracts are matters of deep interest, as little is known of the German presentation of events at Reims. Dr. Simonin was at Verdun for a short time at the beginning of the war and was then transferred to Belgium.

The most picturesque book on Reims that has yet appeared is *Reims La Cathédrale* by R. Burnand, with illustrations by Benito. The text, which is concerned with the dream of a young soldier wounded in an attack on Reims, is a mere vehicle for the illustrations. These are drawn as cartoons and reproduced in brilliant coloring—striking, strong, vigorous pictures—in many of which the cathedral is the central feature. It is interesting to compare these with the more finished illustrations of Boutet de Monvel, in his famous book *Jeanne d'Arc,* published in 1896. But the comparison should not be pushed too far. M. Benito's drawings have an appeal of their own—strong, vivid and amazing in their interest.

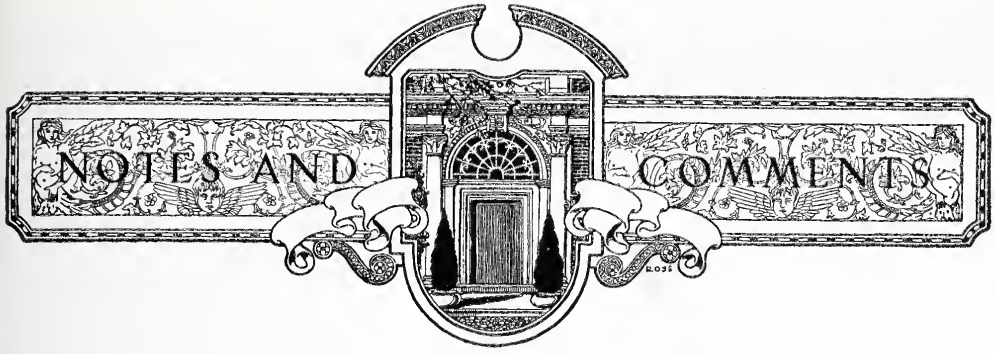
Verdun no longer occupies the commanding place in the daily news of the war, but the end of its war literature has by no means been reached. A very good book, for which the author disavows any originality, is Edmond Pionnier's *Verdun à la Veille de la Guerre.* It is offered as a vehicle for the illustrations after sketches by Wlodimir Konarski. But it is well to have, in inexpensive and accessible form, this excellent summary of the city just before the war broke out. That the story may be complete it is prefaced by an account of Verdun in 1917 by Ernest Beauguitte.

The history of a battalion serving from the beginning of the war in Alsace, Lorraine, Marne, Ypres, Artois and Verdun is given by Henri René in *Jours de Gloire, Jours de Misère.* The author was wounded in Artois, but resumed his service, and concludes his book with experiences at Verdun. Days of glory, no doubt, and many of them; but bitterly hard for the soldiers, and full of misery.

Lieutenant E. Herscher saw service in the Woevre in 1915 and at Verdun in 1916. His book, *Quelques Images de la Guerre,* presents a series of incidents in the war, without attempting any chronological order. It is enriched with many reproductions of his own drawings, in some respects the most interesting part of his book. Of books in English mention may be made of *Ambulance 464* by Julien H. Bryan. Mr. Bryan was a young Princeton freshman, who entered the war when seventeen years of age, and drove an ambulance in the Verdun and Champagne sectors. His book is an intimate picture of experiences on the front.

Dans la Picardie Dévastée by Maurice Thiéry deals, for the most part, with a region of France heretofore untouched upon in these notes. It describes many places after they had been ruined by the Germans. The chapter on Noyon offers a brief paragraph on the cathedral, which is described as intact exteriorly, but gutted, Germans having carried off all the interior metal work, bells, candelabras, organ pipes and statues.

An exciting account of a visit to Soissons during the bombardment is given in *My Home in the Field of Mercy* by Mme. Frances Wilson Huard.



Architecture in Tapestry.

At more or less regular intervals architecture assumes the character of applied engineering, accepting the theory that the one standard of its construction is structural integrity. Utility becomes its watchword and, in theory at least, it eschews any decoration that is not essential to its mechanical stability. Over against this professional austerity stands always the layman, who refuses to see in architecture only the fine adjustment of stresses and strains, but insists on regarding it rather as another one of the arts of decoration. Three-dimensional decoration it is, and as such it must be dependent on mechanics and physics, but dependent on them only, not fulfilled in them. First and foremost it is decoration.

Such was the attitude of the tapestry weavers of old. To them architecture was a decoration, and they made good use of it as one of their main sources of ornamentation. To their charming and sumptuous depictions of architectural types the layman can point for proof that architecture is something more than building—that it is decoration.

In the oldest and simplest cartoons, those of the fourteenth and early fifteenth centuries, architecture was used only as a frame. Delicate pillars, sometimes quite beautifully drawn, made the setting of each scene. Sometimes they were enriched with Gothic canopied statues. Sometimes more intricate carving was attempted. But beauty was not achieved solely by elaboration. The simple and humble brick wall appears as a fine strong element in some of the earliest pieces, notably the Burgundian Sacrament tapestries of the Metropolitan Museum.

A little later in the fifteenth century castles and forts come to play an important part in certain types of cartoons. Particularly in the great confused battle scenes, where literally scores of warriors are huddled in one grand mêlée, buildings are usual. Rather astonishing buildings they are now, little more than peaked towers, often not large enough to hold the leg of one of the warriors beside it. But sometimes really fine architectural effects are obtained with a cluster of these brown and red turrets piled up against the sky.

In some of the late century pieces, before the delicacy of the Gothic turned into the boldness of the Renaissance, architecture reaches its culmination of elegance. Slender pillars and exquisite arches again enter as frames, but this time carved and jeweled into glimmering streaks of beauty.

With the transition to the Renaissance, architecture, along with all the other elements of the design, pays its respects to the new order. Corinthian columns take the place of the Gothic, rather timidly done at first with grubby little acanthus leaves, but gaining in surety with practice until they venture almost as much elaboration as the Gothic which they supplanted.

From the simple brick wall to the fully established classic column the architecture of the tapestries has been purely decoration. Yet even as decoration it must be admitted that it has had to have respect for mechanics. For it cannot be denied that, even in wool, the early pillars, wobbly in the middle, or towers disjointed at the base, are distressing. Even woven structures must be structurally sound.

And one school of tapestry designers has relied just on structural soundness, the fine feel of stone firmly set on stone, to achieve its decorative effect. In the early seventeenth century in France stone arches of almost dramatic solidity played an im-



THE HISTORY OF CORIOLANUS. NO. 5.
PARIS: EARLY SEVENTEENTH CENTURY.

portant part in some designs. In the famous Artemesia set woven for Henry IV and Marie de Medici and in the closely related set of Coriolanus, massive masonry in dark blue is used to set the emotional key, as it were. It defines and epitomizes the nobility, importance and dignity of the actors; and it does this just by emphasis on its own qualities of bulk, weight and clean-cutness.

Perhaps the supremacy of architectural drawing in tapestry, where the justice of the presentation makes it not only a decoration but a record, is in one of the Beauvais Cathedral sets, illustrated in Jubinal's *Les Anciennes Tapisseries Historiées* (vol. II, Plates 7-12). This is a history of the founding of the principal cities of France designed and woven in the early sixteenth century. In the foregrounds are the presumed founders, with the more or less mythical story of their origin in a scroll beneath them. The backgrounds, by far the major portion of the tapestries, are given over to panoramas of the various towns. The most important cities on the fragments remaining to us are Beauvais, Paris and Reims. Beauvais is represented principally by its cathedral, very carefully drawn as it was when the tapestry was woven in 1530. It is still in the course of construction with the scaffolding in place, the transepts only half built. The Bishop's Palace is alongside the cathedral, and the Church of Nôtre Dame, since destroyed, is beyond. On this same fragment, somewhat to the left, is the village of Clermont with its cathedral, Hotel de Ville and chateau, and scattered over the plain at intervals are other less pretentious villages and buildings, all, however, drawn with great accuracy and detail.

Paris is even more fully presented. It is quite a maze of churches, castles, public buildings and private houses. In the foreground is a fine big Romanesque castle with a rose window over the drawbridge. In the centre is one of the great churches now difficult to identify. And here and there lesser churches raise their spires bearing on them a whole flock of weathercocks. But most interesting to the architect of today is the variety and charm of the roof lines of the more humble private abodes. Curved dormers and peaked end gables of different form offer suggestions not to be scorned for our cottage architecture.

In Reims the lesser buildings are not so delightful, but particularly interesting to us under present circumstances is the careful drawing of the cathedral. It piles itself up, story on story, in the centre of the design, very little obscured by the smaller church in front of it. The only thing on the skyline that challenges its interest is the gallows dangling two corpses.

Tapestry is a flat surface, and every good tapestry designer knows that it is part of his business to keep it a flat surface. So these masses of buildings have been presented, not in bulk and perspective, but as front elevations, and as such they might well serve as models of clarity, comprehensibility and beauty to practical architects of today.

PHYLLIS ACKERMAN, PH. D.

An Architectural Propaganda.

The most potent factor in the education of an architect is, without doubt, the study of ancient work from the originals. Such study is of course possible only to those possessing means sufficient to permit of foreign travel. Some of the schools overcome this handicap to a degree by collections of casts, and in a few of the larger cities the student has access to casts and perhaps to some original exhibits in the architectural departments of the local art museums. The collections are, however, few and far between and in most cases hopelessly inadequate.

In the meantime great sums are being invested in paintings, marbles and bronzes for the enrichment of museum collections; while architecture, the master art of them all, is overlooked entirely or perchance represented by a few portfolios of plates or a fragment or two of details. The average person's conception of an art museum, therefore, naturally seems to be a rather ornate structure containing galleries for the exhibition of paintings, sculpture and perhaps a few other objects of artistic interest. These are the exhibits which the public has learned to look for in an art museum, so most naturally these are the features to which it devotes its attention even in great institutions like the Metropolitan Museum of Art, where the so called "industrial arts" are so extensively featured. In other words, the public goes to see what it thinks it ought to see, and it has been brought up to suppose that pictures and statues constitute the raison d'etre of an art museum.

Is it not then most desirable that the architectural profession should urge the formation of collections of architectural works illustrating the development and progress of the greatest of all arts? By thus becoming familiar with the masterpieces of the past, the public would be brought to a realization of the fact that a knowledge of the great works of architecture is as essential to culture as a knowledge of the famous works of painting and sculpture.

Interesting experiments in art propaganda have been tried recently in the West, where lecturers on art have visited the agricultural fairs, giving illustrated talks, which proved so attractive to the crowds as actually to injure the business of the amusement concessions. This eagerness to know more of the subject of art is everywhere in evidence and needs but to be properly gratified and directed to bring about a great change in the esthetic ideals of the nation.

Collections of well chosen casts from architectural subjects, to which the attention of the public could be drawn through the medium of lectures, informal talks and descriptive catalogues, would be of immense value in carrying on such a propaganda. A scale model of the Cloth Hall at Ypres, for instance, or a group of full-size plaster casts from the sculptures of Reims would prove strong attractions in any museum or exhibition, and if accompanied by photographs showing the present ruinous condition of the originals would doubtless draw great numbers of people who might otherwise never be reached.

The result of publicity would be not only an increased appreciation of the importance of architecture as a fine art, but also a raising of architectural standards, due to a more intimate acquaintance with the great work of the past on the part of both architects and laymen.

With the demolition of ancient buildings we find constant accessions of architectural treasures to the collections of the great museums, but the prices demanded for these are so great and their number so small that the lesser institutions are rarely in position to purchase them. Consequently the logical course would seem to be the formation of collections of casts so colored and so placed as to give as nearly as possible the effect of the originals in situ. Good taste used in placing the exhibits so that a maximum of effect is obtained will make a comparatively small collection chosen with discrimination prove more impressive than a great clutter of specimens stacked up on floor and shelves.

An intelligent propaganda of architectural education, fostered by the museums as well as by the architectural profession, could not but prove of great artistic value to the country.

The world is witnessing the destruction of much of the best that the past has handed down to us and realizes as perhaps never before the tragedy of this loss. Great numbers of art treasures which have been hoarded in the collections of Europe will now of necessity be sold to meet the war's demands and a large proportion of them will come to this country where they can be made a most effective factor in this campaign of education.

Never before have conditions been so favorable for arousing a national appreciation of art, and it is to be hoped that the architectural profession will do its part.

It is a matter for congratulation to know that the French government, which is always foremost in any movement to promote knowledge of the arts, has placed the vast resources of her own collections at the disposal of all comers.

Thus, any museum desiring to secure casts of architectural subjects will find the wealth of the Trocadero and the Louvre collections of casts available for it to pick and choose from.

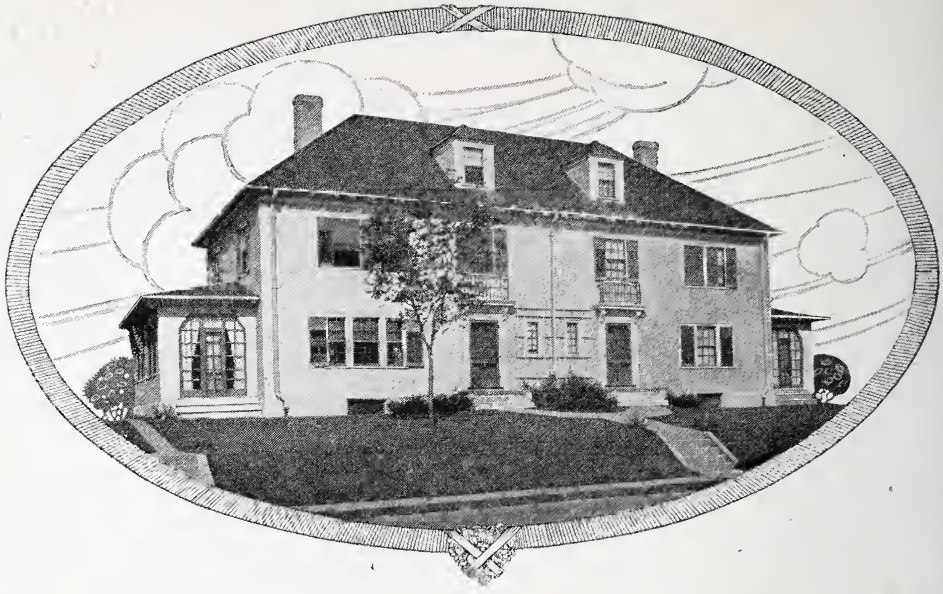
A verification of this generous policy is contained in a recent letter from the French Ambassador, in which he states that "Any one who wants duplicates, even when the subject is as big and expensive a one as the Limoge Jubé, can place his order with the administration of the Museum."

I. T. FRARY.

THE ARCHITECTVRAL RECORD



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Yearly Subscription—United States $3.00—Foreign $4.00—Single copies 35 cents. Entered May 22, 1902, as Second Class Matter, at New York, N. Y. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY
THE ARCHITECTURAL RECORD COMPANY
115-119 WEST FORTIETH STREET, NEW YORK
F. T. MILLER, Pres. W. D. HADSELL, Vice-Pres. J. W. FRANK, Sec'y-Treas. E. S. DODGE, Vice-Pres.



FIG. A. THE END OF THE TERRACE—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.

THE ARCHITECTVRAL RECORD

VOLVME XLIV NVMBER VI

DECEMBER, 1918

The RESIDENCE OF ALLAN S. LEHMAN, ESQ. — TARRYTOWN, N.Y. — JOHN RUSSELL POPE, ARCHITECT

By Howard Dwight Smith

No false note disturbs the color harmony of the front. Silvery-gray of the oaks and the mellow tints of the spaces between the uprights combine beautifully in the setting of foliage around the house. The large expanse of roof and the restful lines of the front invite the eye to dwell on the delicate timber work in the gables and the rich detail of the bargeboards.— Description of Ockwells Manor, built in the Fifteenth Century.

THE practice of architecture, particularly domestic architecture on a large or even on a relatively small scale, is essentially an art of peace. The genius and the organizations which devise and execute the solutions of problems incident to the comfortable and convenient domicile of man in time of peace may be quite fitted to devise and execute the solutions of other problems of construction incident to the prosecution of a great war, but domestic architecture as a fine art must be nurtured by peace and prosperity.

However detrimental the waging of wars may be to the vigorous practice of domestic architecture, we owe in a great measure to the invention and use of gunpowder the inception and development of the domestic style ordinarily known as Tudor architecture. By the creation of so powerful an arm of warfare as artillery the feudal castles and baronial strongholds of the medieval centuries, which were essentially fortresses, became obsolete as places of residence. The strongest available artillery units of England in the fifteenth and sixteenth centuries were in the control of the reigning house of Tudor. The futility of the use of force against such military power by any aspiring to usurp the royal prerogative brought a state of general peacefulness to a hitherto quarrelsome countryside. The medieval castles, with their battlements and moats, machicolations, drawbridges and turrets, gave way more or less suddenly to less

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fortress-like dwellings. This period of transition, a new style supplementing an old one, came with that period of "new learning" known elsewhere as the Renaissance, a time when originality and richness of thought were at their height. Sir Edward Coke said, in the seventeenth century, that "the house of everyone is to him as his castle and fortress as well for his defense against injury and violence as for his repose." The Tudor houses were the first in England wherein the latter use was not overshadowed by the former.

It is to the Tudor period and style that the architect for Mr. Allan S. Lehman turned for inspiration when he designed this new residence at Elmbrook, Tarrytown-on-the-Hudson. The historical exactness of the execution of the work and the atmosphere of the period which have been given to the building and its surroundings warrant some reference to precedent and prototype. The creation of such a building is only possible when the artist has made such a thorough and intensive study of the period as to be able to think and to work in it with facility. Precedent and prototype are made the servants of the designer in solving a modern problem, clothing it in the charm of an interesting though long past period.

The building of a home on a country estate today presents, besides the usual and unusual exigencies of plan conditions incident to particular family requirements, the added problem of catering to a fairly well-defined prejudice or inclination on the part of the client to some historical style. A wave of philanglicism in architecture and decoration has been sweeping over America for the past decade. It is natural that we should look to England for precedent in domestic architecture, inasmuch as the problems to be met and solved in England are probably more nearly similar to our own than are any others. This wave of philanglicism is spending itself in the popular demand for Adam, Georgian and Tudor work.

So, in the "program" presented to Mr. Pope at the outset of his work on the Lehman residence, there was included a decided inclination to the Early English as one of the salient points for consideration. Seeking inspiration from such a highly developed and wonderful style set a high standard to work upon. The results obtained in the execution of this residence evidence again the ability of Mr. Pope and his organization to attain fine ideals of feeling and atmosphere in outward appearance while satisfying the practical requirements of plan and convenience withal achieving a measure of structural perfection at an economical expenditure compatible with the owner's requirements of permanence and durability.

The success of the exterior of the Lehman residence has been due to the unusual boldness with which the materials have been chosen and used and the sincerity with which the effects of age and weathering have been simulated. The charm and dramatic effect of the building furnish the strongest sort of justification for the deliberate "making of an antique"; not for the sake of the antique, but for the sake of the charm which it possesses. Mass and line and light and shade are fundamental factors in determining beauty in architecture. But color and texture and "patine" are also pawns with which to buy charm and interest, and the architect who chooses his brick and stone and wood and slate with the same care and thought as the painter chooses his pigments, and who builds them together with the studied technique of a painter, is insuring added and sustained interest to a building which may satisfy all the academic requirements of grace and beauty. It is thus that the Lehman residence has been builded.

The character of style and texture once fully determined upon, the boldness of the execution was facilitated by the very practical expedient of constructing models of portions of the building. The principal one of these models consisted of a section of wall erected at the site in a position of average light and shade, in which was built a portion of a window, comprising sill, jamb, head, and one mullion, and over this was a half-

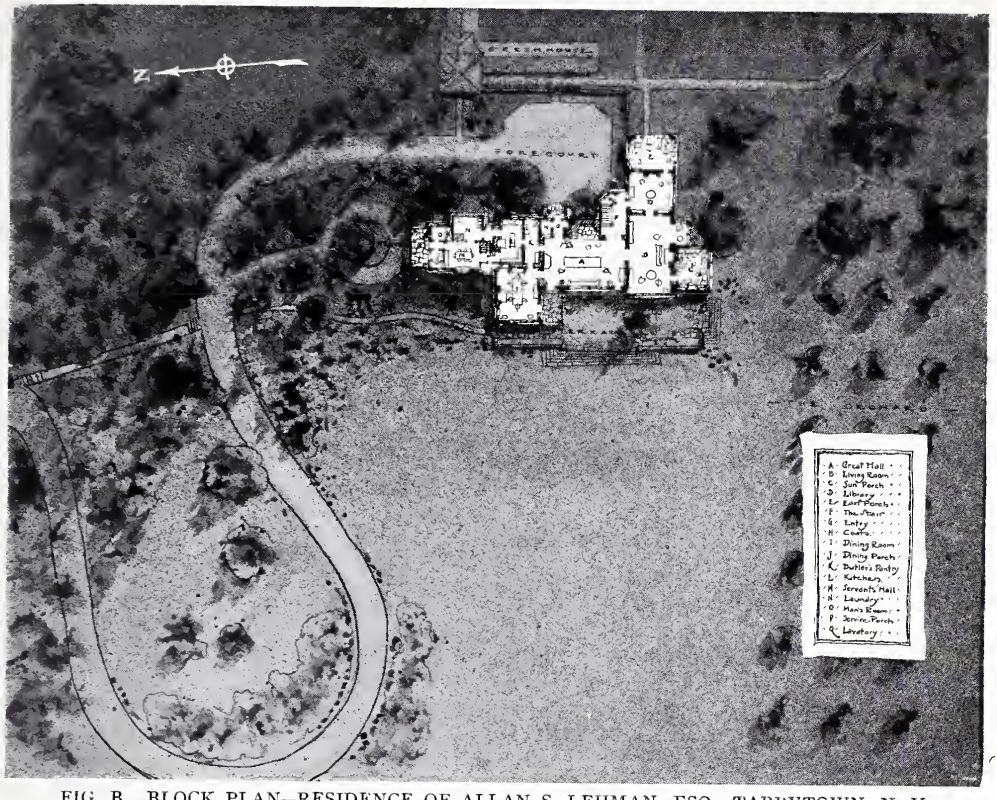


FIG. B. BLOCK PLAN—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

timbered section with overhanging eaves. This model served three distinct and very important purposes. Primarily it assured the designer as to the proper execution of his conception, and it permitted him to study delicate points of relationship between materials which would not otherwise have been possible. The greater the calibre of the designer the more does he insist upon the complete visualization of his work before he feels justified in leaving it to those who are to execute it. The second thing which the model did was to become a specification for the work. The significance of this may be appreciated by the profession, which has had to face on every hand the commercialism of competitive building, a competition which delights in seeking refuge for its shortcomings behind the expression "usual practice" in the execution of work.

When the bidders on the Lehman work saw and realized that the contract called for the laying up of the split, swelled and fused cull brick from a dozen or so old Dutch kilns, and that the half-timber framework had all exposed surfaces adzed and treated with sandblast, and that the stucco panels could not be placed in any category of current specification phrases, they could realize quite vividly that the line drawings upon which their estimates were to be based had a definite meaning in three dimensions as well as in two.

The third important function performed by the model was that of assuring an intensely interested client that skepticism as to the efficacy of the described methods which were proposed in the finishing of his residence was unfounded, and that such methods would not result in an appearance of dilapidation and wanton destruction if followed in the actual building.

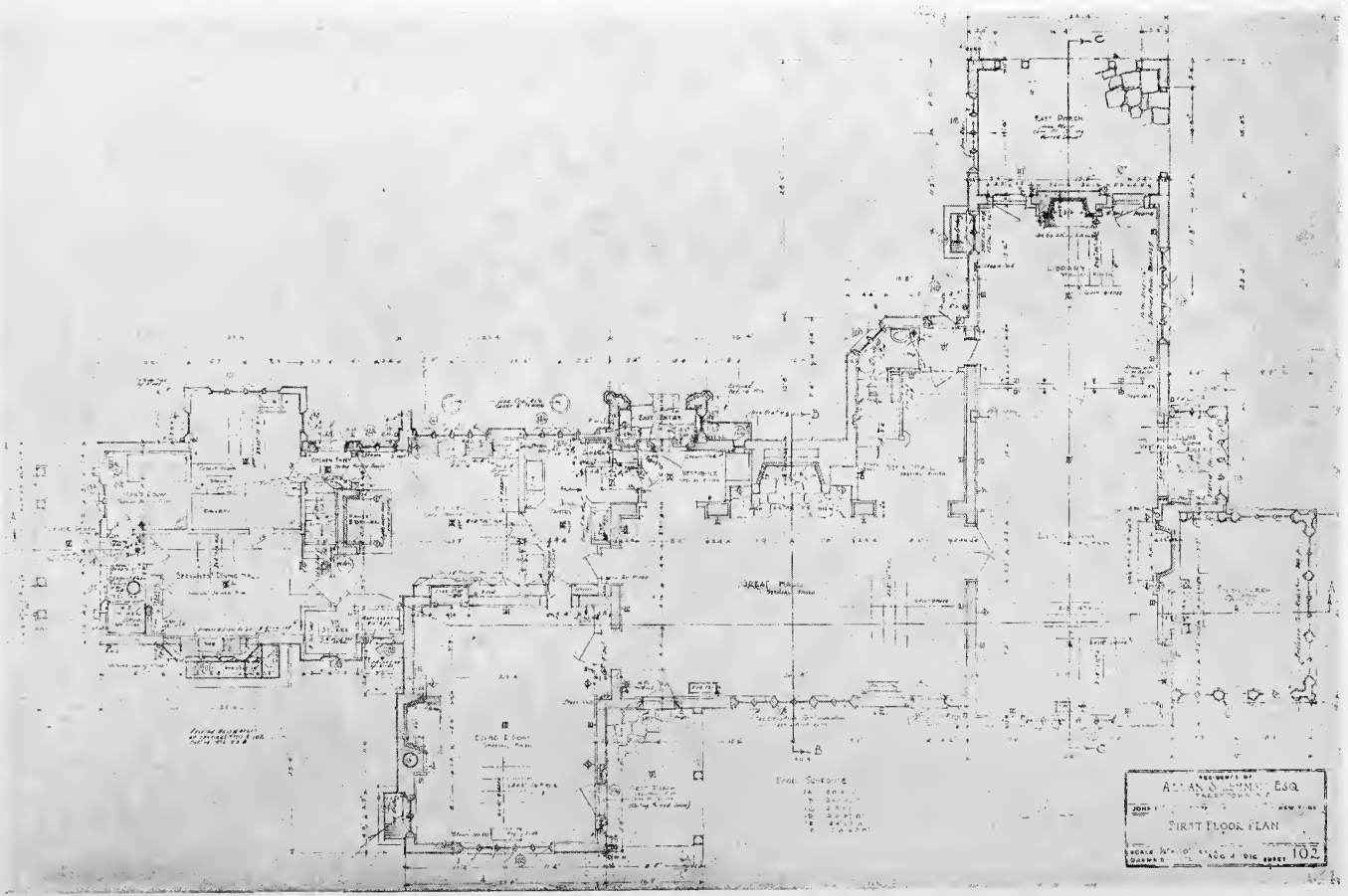


FIG. C. FIRST FLOOR PLAN—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.



FIG. D. WEST OR RIVER FRONT--RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.



FIG. E. FROM THE ENTRANCE DRIVEWAY—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.



FIG. F. FROM THE NORTHWEST—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

The problem of plan presented to Mr. Pope was in a way not a very complicated one as domestic plans go today. The great hall, always the *pièce de résistance* of the Tudor manor house, forms a satisfactory nucleus about which to dispose the other necessary elements of plan requirement. As in the old houses, this great hall is used for circulation and assembly as well as the centre of the life and activities of the household. With this great hall occupying a central position, its great window facing the west, where are the open vistas and views across the Hudson to the Palisades, the natural disposition has been to place the more private and secluded rooms of the family to the south and the service wing to the north with an adjacent dining room ell for convenient service access. The difficulties of vertical circulation where a great hall extends up through two stories has been quite logically and conveniently worked out in this instance by the use of two stairs. The principal one is directly off the great hall and leads to the south suite of master's bedrooms; the secondary one in the service wing leads to the children's suite and on up to the third floor. Access is provided from one to the other by an open gallery across the east side of the great hall at the second floor.

So much, then, for a general discussion of the plan. If we consider the exterior in the chronological sequence ordinarily occasioned by a visit to that portion of the estate upon which the house is located, we shall be able to consider details of elevation and plan as we proceed.

The approach to the house is by a devious roadway on the estate, at first between rows of elms along a narrow stream and over an old stone bridge of no pretense save that of picturesqueness. The site of the house is the highest part of the estate, and this height is reached by a long loop between the bridge and the forecourt. It is on the second arm of this loop (Fig. D) that the house is first seen diagonally across the lawn, with a passing view of a typical Tudor composition of gray timbered gables,

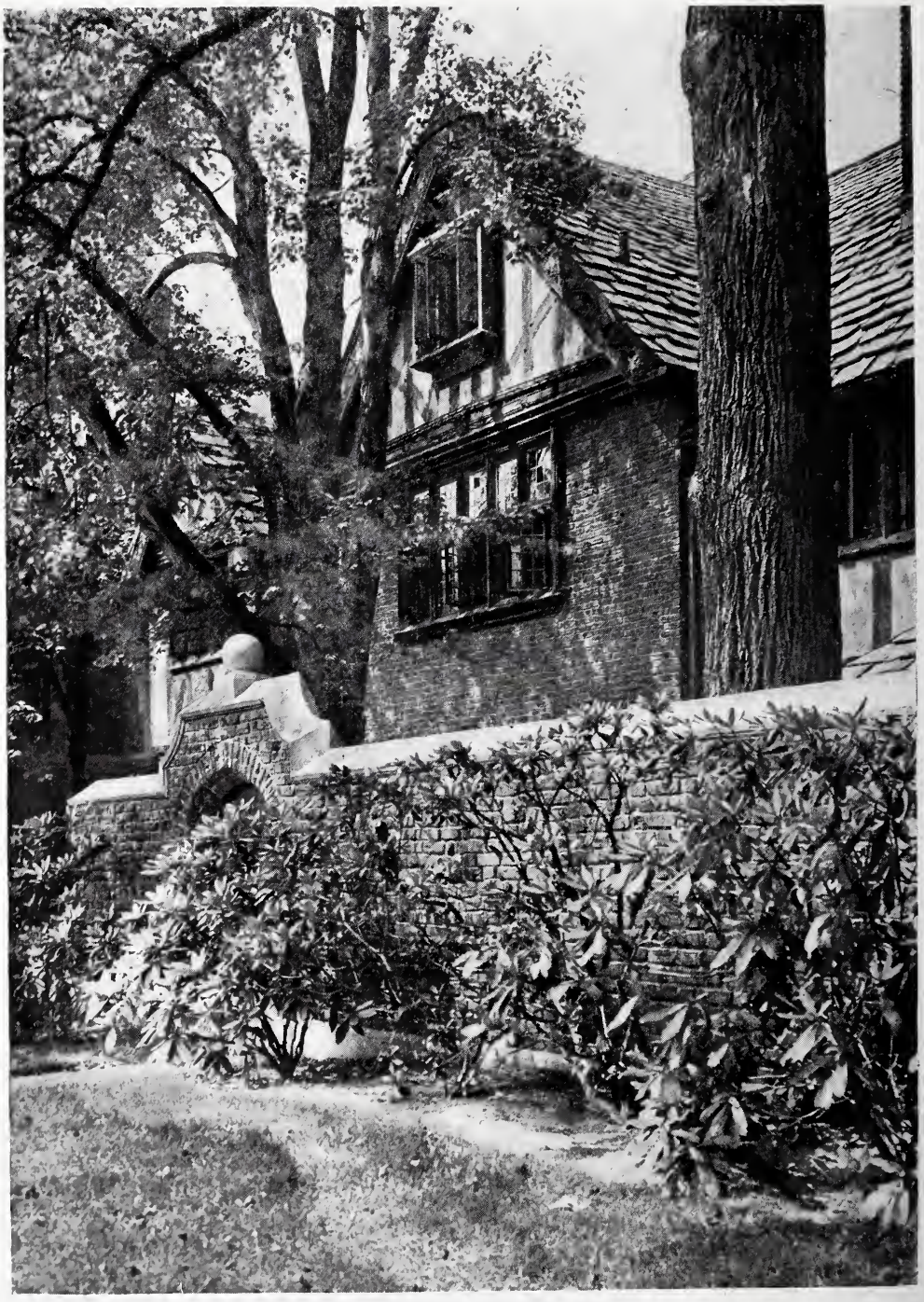


FIG. G. SERVICE COURT WALL—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.



FIG. H. ENTRANCE COURT—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.

brick walls, quaintly twisted and patterned brick chimneys and a long flat terrace. This passing view (Fig. F) suggests also a very soft harmony of color—a sort of burnt sienna gray brick of velvety texture, leaded casements, brown gray timber, yellow gray stone and warmer toned stucco. One retains this view and impression of the lawn front in mind until one sees it again from a more intimate position on the lawn itself later.

Passing thence, among the trees and beds of rhododendrons, past the carefully planted service drive, the straight length of drive leads to the forecourt. This straight portion of the drive, by the requirements of the planning scheme, goes past the service wing of the house. By thick and careful planting the dooryard is eliminated from the main picture; while by the fortunate feature of its simplicity the half-timbered portion of the service wing, showing above the laundry yard wall among the heavy foliage of the big trees, presents one of the most picturesque compositions of the whole estate (Fig. E).

Here it is realized what great advantage has been taken of a very favorable natural setting. Trees from sixteen inches to thirty inches in diameter, whose topmost branches are more than twice the height of the house itself, grow within a few feet of the house and within inches of garden walls (Fig. G). By the employment of nurserymen to take proper care of trees whose roots and branches might be interfered with during building operations, the house has been successfully placed in a seemingly impossible position. This fact alone would make it seem most certainly a part of the landscape itself as if it had always belonged there.

The forecourt is angular, and that part which is not bounded by the main portion of the house, the stair bay and the library wing, is enclosed by a seven-foot brick wall with stone coping (Fig. H). The long stretch of wall to the east shuts off the greenhouses and gardens. The entrance feature (Fig. I), with its little open loggia on the ground floor and its gabled second story, is reminiscent of Gifford's Hall, Suffolk. The moldings of the stonework are interestingly crude, and here we get a close enough view of the woodwork to see the texture which has been given to the surface by the process of ship-adzing and sandblasting, and also of the bargeboards whose rich carving is of that style which was a valuable legacy of Gothic to Tudor, and which was so creditably nurtured and used by the latter (Fig. J).

The stair bay (Fig. K), with its long leaded panes, well indicates the plan, and the little problem of getting into the house informally yet comfortably under the stair landing has furnished the opportunity of disposing an intimate looking door (Fig. L) in a manner so typical of the style. Exit to the greenhouse and gardens from the forecourt is through the gate in the wall opposite to the main entrance door. Once through this gate we are shut off from the public and into the private portion of the grounds immediately surrounding the house. The library and the east porch are the most secluded parts of the building (Fig. M). They overlook the south lawn and the gardens of flowers and vegetables to the southeast, and only stray glimpses of the river view can be obtained from these portions.

But as we pass on around to the southwest corner past the sun porch we get the view again of the west lawn or meadow front and the whole principal façade of the building is presented to view (Figs. N and D): the sun porch, the gables, the great hall window and the dining portico, not unlike the fifteenth century Ockwells Manor in Lancashire, save that one small gable of that historic example is ingeniously replaced by an oriel-like chimney motive with a sun dial and a port-hole window. In passing it is interesting to note the form of this sun dial, which has been computed to register accurately the hours and fractions, even though it is placed on a wall facing due west. In the woodwork and carving of the sun porch (Fig. O) there is recalled the old Lavenham Guildhall, variously described as one of the

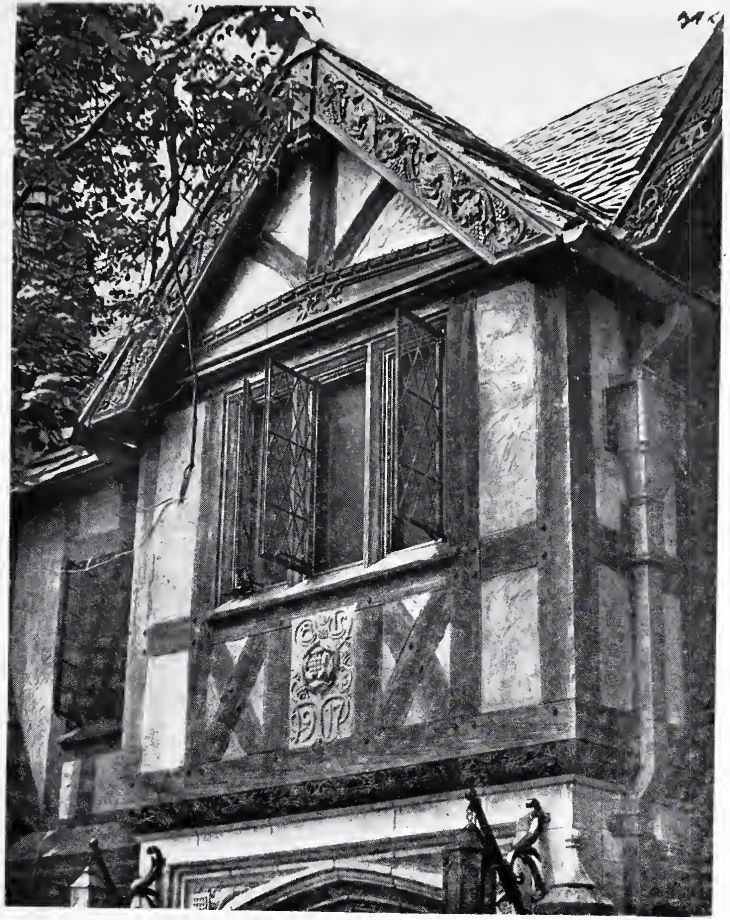


FIG. J. DETAIL OF ENTRANCE GABLE—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

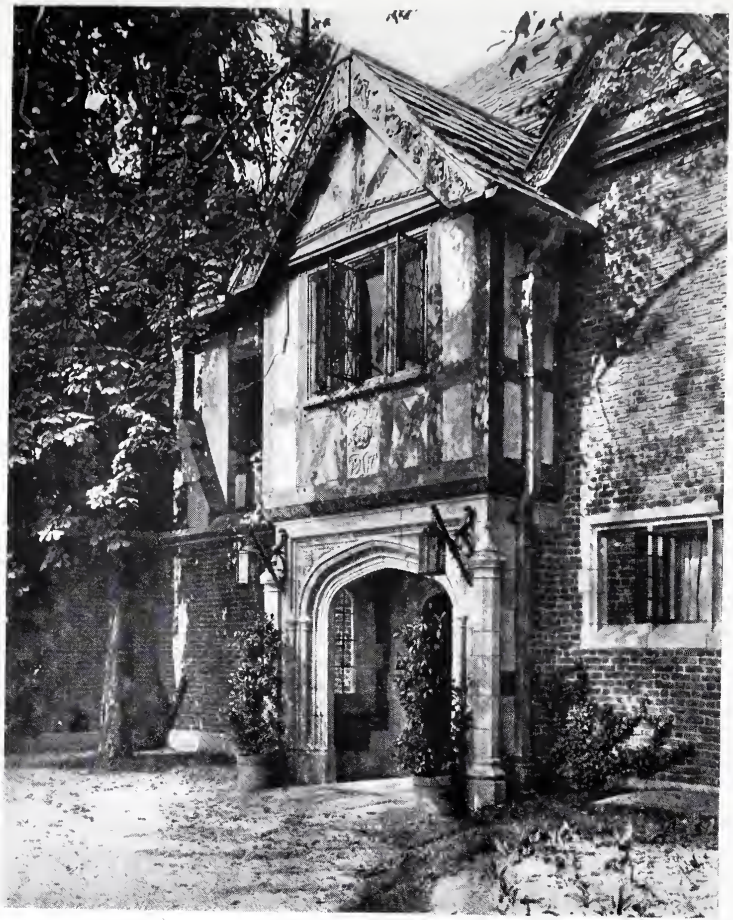


FIG. I. MAIN ENTRANCE—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

best examples of the early sixteenth century half-timber work. In the gables and bargeboards (Fig. A) and the projecting bays we see the influence of the study of Compton Winyates, the country seat of the Marquis of Northampton, Warwickshire, from which Mr. Pope found so much inspiration for the residence of Mr. Stuart Duncan, at Newport. The bargeboards perform the structural function of protecting the half-timbered gable portions from the weather; but the effect of age and weather has been approximated by the finish given to them, so that we can say of this building, as has been said of its prototypes, "even without ornament on gables, leaders or vergeboards the texture of wood becomes so beautiful through age and weather as hardly to require ornament." The color of the woodwork is successful just in so far as the silver gray of weathering has been produced instead of the brown which is so prevalent in work of newer appearance.

The possibilities of the use of cypress as an exterior material have always been conceded structurally, as it ranks among the best American woods for good weathering qualities and strength. But it has remained for this example of Tudor work to show that it is possible, by proper treatment, to produce the pleasing effects of aged oak and to obviate the present difficulties and expense of obtaining the heavier material. Cypress has been used throughout for exterior work.

Ockwells Manor is most closely followed in the dining porch (Fig. P). The porches of the entire house, four on the first floor and three on the second, are disposed within the mass of the building, and a very difficult problem which always confronts the designer in Tudor work has been successfully overcome. The service porch on the north is included within the building by carrying the north end of the service wing roof down in a sweep which ends at the eaves of the lower porch. The library, or east, porch, which is on the north and south axis of the main drive and forecourt, is enclosed on the north by a masonry wall pierced by an unglazed window. The second story extends completely over this porch. Both the sun porch and dining porch carry a projecting second story above, in which has been placed a sleeping porch. So the plan abounds in porches without extrusion.

The consistency with which the artistic effects produced by original sketches have been carried into execution applies to the roof as well as to the other parts of the house. Much of the charm of the Tudor roofs and those of Normandy of the same period is due to the irregularity of gradation in size and thickness and the humanizing effect of patches and repairs. In the Lehman residence texture is augmented by a studied gradation of color as well, in which unfading black slate from Virginia is used at the ridge and predominates in the upper third of the roof. Receding from the ridge, weathered and fading greens and olive grays from exposed quarry ledges in Vermont are mixed in. At the eaves the Vermont varieties predominate in sizes up to thirty inches in length and an inch thick. The leaded gutters at the eaves and the hand-wrought leaders and leader heads are distinctly in the period as to design and particularly as to execution.

The west terrace is the embodiment of the spirit of the Tudor idea of domesticity. The forbidding moat of an earlier period is replaced by a long embracing terrace, almost as another room of the dwelling, inviting and pleasant and open. In this instance all the principal rooms of the house have entrance onto it. The dining room and great hall have doors onto the open dining porch into which the terrace intimately extends. The great hall has a door to the terrace under the oriel chimney and the southwest sun porch opens onto it. The level of its worn flagstones and its grass is the same as the floors of the rooms inside the house. The enclosing wall is very low and does not shut out the open meadow down to which the long line of low steps leads. The natural landscape advantages of the site, the topography and the large trees and the careful placing of the house



FIG L. DOORWAY IN STAIR TOWER—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

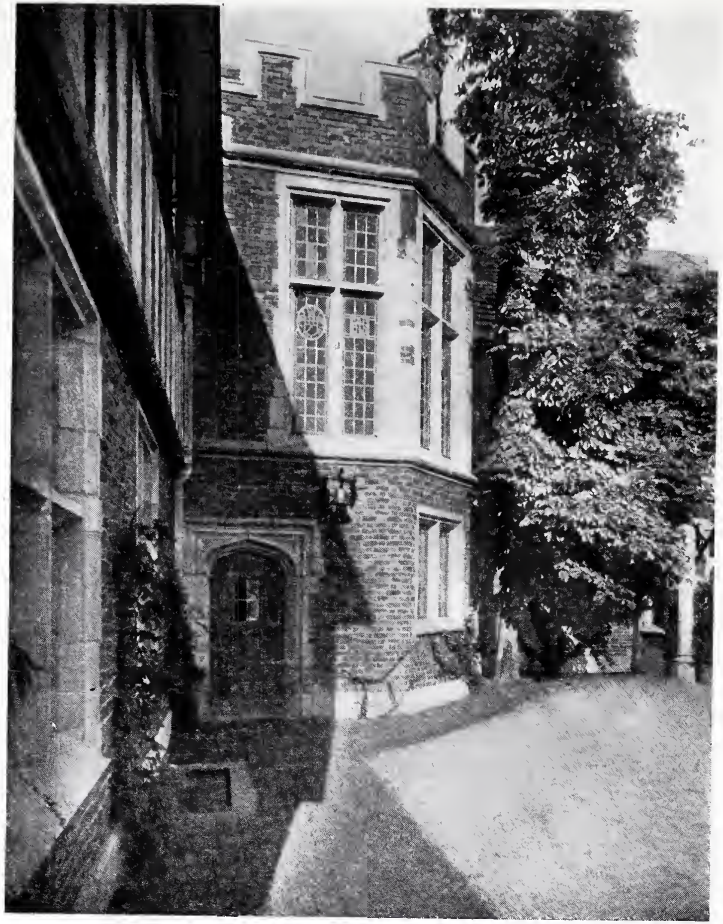


FIG. K. STAIR TOWER—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



FIG. M. FROM THE SOUTHEAST—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.

with reference to them have made it necessary to use planting only sparingly and as a supporting adjunct or detail in the architectural scheme.

There is always a certain intimacy between exterior and interior in a Tudor building due to the practice of using full thickness stone mullions in the windows which show in the rooms. This is a pleasing heirloom from the Gothic which gives strength and character to Tudor interiors. This should not necessarily lead to crudity of interior detail, but unfortunately it often does just that in actual practice. There is an attractiveness about "primitives" which makes them interesting to look at and to enjoy as museum subjects; but the refinement of our domestic requirements today are such as to make it imperative, or at least advisable, to exercise a great deal of care in the execution of interior finish and the choice of furnishings and hangings. That which has a momentary appeal may not wear well. In most instances in the interiors of the Lehman residence crudity has been avoided by simplicity. The great hall (Figs. S and T), the show place of the house, is most elaborately finished and appointed in architectural detail and applied decoration. The most important feature of the room is its great window to the west, fourteen feet wide and extending some nineteen feet from the floor. Opposite to it is the large stone mantelpiece in a sort of inglenook under the gallery, which is used as circulation between the two wings of the house on the second floor. The contrast between the light plaster and the applied irregular half-timber is not generally to be commended in interiors of this sort.

The wood trim and doors in the dining room are the most interesting details of that room (Fig. Q). The trim is of well selected old oak and it is set flush with the plasterwork—a feature which is not always easy to accomplish in modern work, but which does more than any other one thing to give the feeling of the old half-timber construction.

The simplicity of the living room rivals that of the dining room. The warm-toned, slightly rough-finished plaster of



FIG. N. THE RIVER FRONT—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.

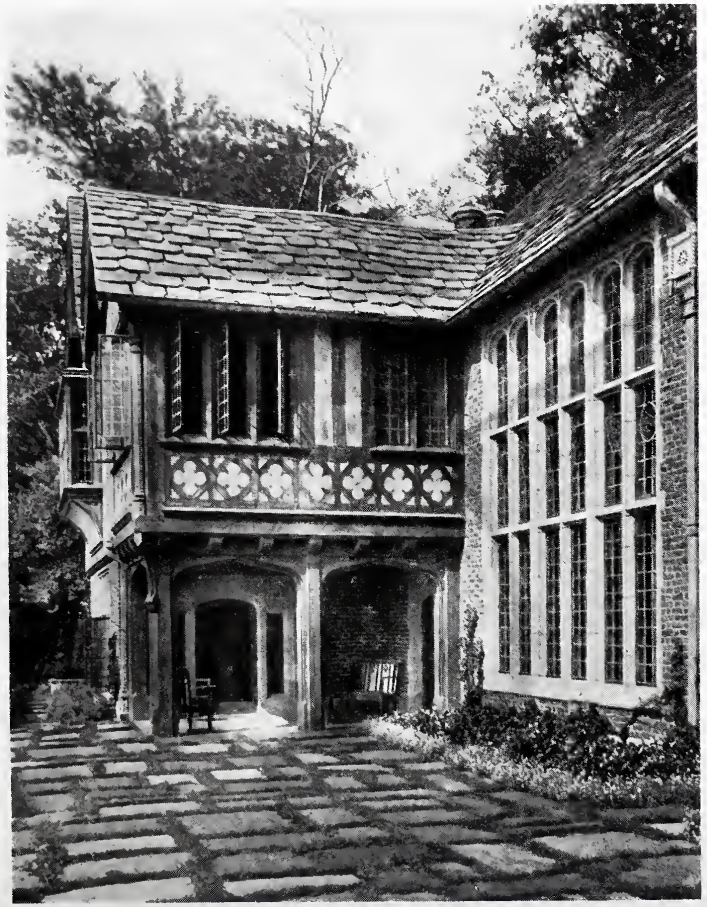


FIG. P. THE TERRACE—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



FIG. O. SOUTH GABLE AND ENCLOSED PORCH—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



FIG. Q. THE DINING ROOM—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



FIG. R. THE LIBRARY—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



FIG. S. THE LIVING HALL—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y. JOHN RUSSELL POPE, ARCHITECT.

the walls has been left in its natural condition and is an appropriate background for the several pieces of interesting furniture in the room. The small library (Fig. R) is the room of greatest privacy and seclusion on the first floor and has been treated as such in its refined finish of old wood wainscot and low ivory-tinted plaster ceiling in flat relief. The colors of the room are very quiet and rather dark, the bookshelves being covered with secret panel doors to avoid the introduction of additional color or relief. The only interior door into the library is from the living room, except for the secret door at the side into the stair hall, by which one can enter on coming down from the second floor without going through the more public great hall.

The stair hall extends through two stories and is very open and light. It has the three large windows extending from the exterior belt course up to the ceiling, and it embraces a portion of the long gallery of the great hall and a part of the corridor of the suite of master's rooms in the south or library wing. The stair itself is of oak, disposed in three runs of eleven, five and five risers, approximating rather closely the best examples of Tudor and Elizabethan stairs.

Of this house it may be said that it has been practically planned and carefully executed. The success of the architect in an operation of such unique accomplishments has been due to his ability to lead his client during the entire course of the conception and development of the building, while always maintaining a due and serious regard for the client's wishes and actual requirements. It is for such leadership in thought and service in action that a man of discretion seeks the advice and association of an architect of ability and standing. Mr. Lehman's new residence at Elmbrook is a decided step forward in the progress of the peaceful art of domestic architecture in America.

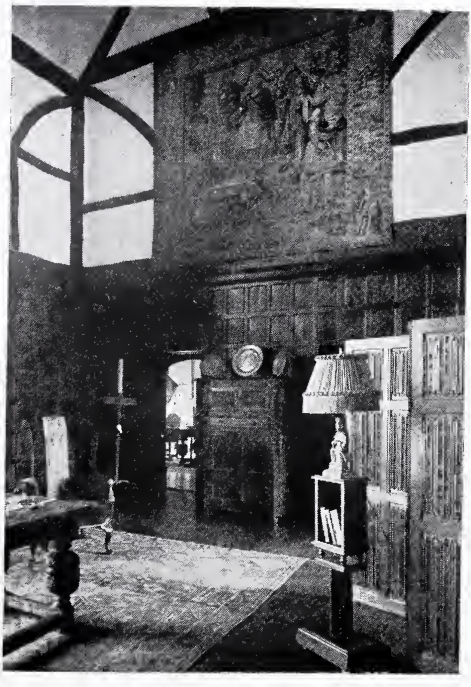


FIG. T. END OF LIVING HALL—RESIDENCE OF ALLAN S. LEHMAN, ESQ., TARRYTOWN, N. Y.
John Russell Pope, Architect.



ONE OF THE TWO GATES—GARDEN AT BEACON HILL HOUSE, NEWPORT RESIDENCE OF ARTHUR CURTIS JAMES, ESQ. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



GARDEN AT NETHERMUIR—RESIDENCE OF H. W. DE FOREST, ESQ.,
COLD SPRING HARBOR, N. Y.

The WORK OF OLMSTED BROTHERS

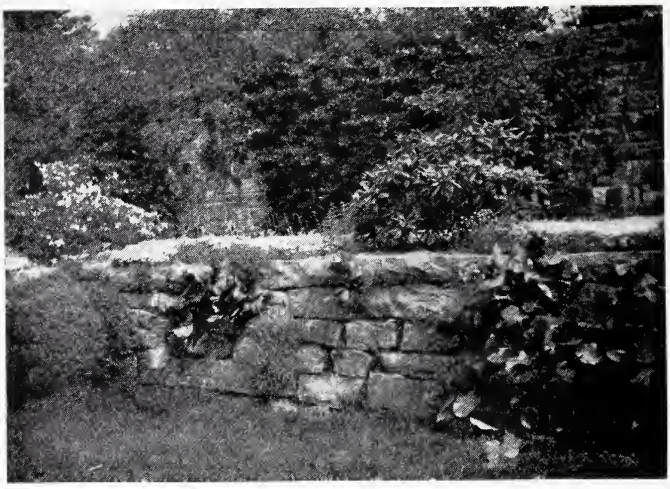
By John Taylor Boyd, Jr

PART II

THE large parks in New York, Brooklyn, Chicago and Buffalo that Olmsted laid out in partnership with Vaux and Withers must have given him a great push forward. After the partnership was dissolved, his elder son, John C. Olmsted, joined his father in 1875, to remain with him throughout the length of his career and then, after the death of Olmsted senior, to continue at the head of the firm, which he leads today, apparently as vigorous as ever. Truly a record to be compared with his father's. Mr. John Olmsted has an uncanny memory for details, for conversations, instructions. Immediately upon joining with his father he became the latter's whole office force, doing all the drafting himself, keeping all the records. When Frederic Law Olmsted traveled to superintend the work, his son went with him, witnessed all the transactions and decisions, and acted as secretary to his father in meetings with clients.

Many commissions came to Frederic Law Olmsted. In New York City he laid out Madison Square and Tompkins Square, while Riverside Drive was started. Then, in association with Mr. Croes, an engineer, a vast scheme for the whole of Westchester County was drawn up, a forerunner of the great real estate development schemes of today. Mr. Croes worked out a complete rapid transit system of railways—cut and fill, etc., in the correct method—which if stuck to would have saved millions of dollars. Those who know how awkward the present entrance of the New York Central Railroad into New York City is will realize what a boon it would be to the dwellers in the district north of the Harlem River had the transit problems been solved before the growth of vested interests and the enormous increase in real estate values had rendered a thorough solution impossible.

In the Westchester County project Olmsted devised the system of curvilinear streets. The whole effort was a fine example of early city planning, but, unfortunately, it was too far ahead of its time to be adopted. It furnishes a striking example of Olmsted the pioneer—

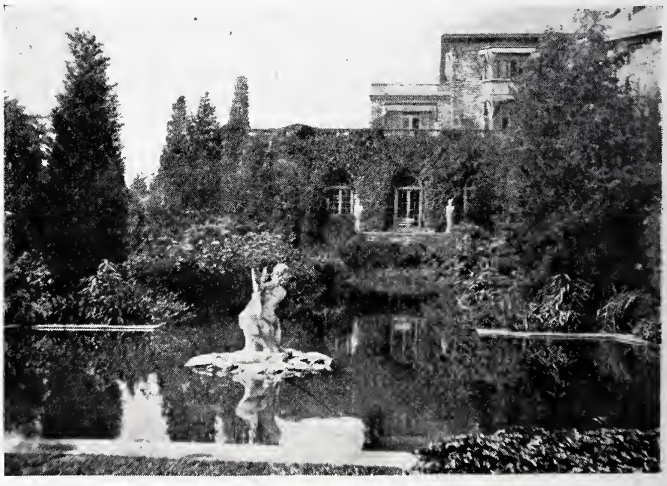


VIEW IN GARDEN AT NETHERMUIR—RESIDENCE OF H. W. DE FOREST, ESQ., COLD SPRING HARBOR, N. Y.
Olmsted Brothers, Landscape Architects.

always adventuring into new paths in his profession; always adapting it to new uses.

The summers of '78 and '79 the Olmsteds spent in Cambridge, Mass., working on plans for the Back Bay Fens of Boston. Here Olmsted's practical and literary genius won acceptance for his plans from the Boston authorities. The "Fens" were a large basin of tidal marshes that blocked Boston's growth toward the west. So noisome were they from receiving the sewage of many neighboring districts that they threatened to devastate Boston with epidemics. Olmsted proposed to drain them, confine their wandering, sluggish streams between well-defined banks, to add paths and roadways, and to create thus a park. Thereby he hoped so to increase land values in the neighborhood of the Fens and to the west of Boston that the millions of dollars spent in the improvement would be more than paid for. His project seemed too good to be true to the business men of that day, but they accepted the scheme as a necessary measure of sanitation. Afterwards, it may be remarked, the growth of real estate values around the Fenway surpassed even the hopes of the landscape architect. It was often this way; for Olmsted gained the acceptance of many projects by utilizing their practical possibilities to the utmost.

With the adoption of these plans of his for the Fenway, Frederic Law Olmsted became the landscape architect of the Boston Park Commission in 1880. He took up his residence in Brookline, the Boston suburb, in order to be near Mr. H. H. Richardson, the celebrated architect, his contemporary. Mr. Richardson and Mr. Olmsted had been close friends ever since the two had worked together on the Albany Capitol, where Mr. Olmsted laid out the grounds. In a room of his Brookline house the Olmsted firm's office was established, where it still is today, much enlarged.



LOOKING UP LONG POOL TOWARD TERRACE—GARDEN OF ARTHUR E. DAVIS, ESQ., DOVER, MASS.
Olmsted Brothers, Landscape Architects.

In Brookline Frederic Law Olmsted worked up the practice of the firm. As his first junior partner he took Henry S. Codman, a nephew of Professor Charles Sargent, a man invaluable in consultation and in his powers of persuasion. Mr. Codman entered the firm in 1889 and died in 1893.

Then came Charles Eliot, son of President Eliot of Harvard. Eliot contributed greatly to the firm, doing effective work in the design of the great Metropolitan Park System of Boston. Eliot entered the firm in 1893 and died in 1897. His activity is covered in a biography written by his illustrious father. Like the elder Olmsted, he, too, by his reports and writings, did valuable service in the cause of landscape architecture. Especially notable is his report on the Vegetation and Scenery of the Metropolitan Reservation (Boston) in 1897. Frederic Law Olmsted's reports to the Boston Park Commission are still models for the landscape profession; mines for information and for the material of propaganda. His paper read before the Society of American Political and Social Science, "The Justifying Value of a Public Park," is celebrated in landscape architectural circles.



ONE OF THE TWO GARDEN HOUSES, WITH ADJACENT TREATMENT, IN GARDEN OF CHARLES W. HUBBARD, ESQ., AUBURNDALE, MASS.
Olmsted Brothers, Landscape Architects.

The work of the firm went on, largely on parks and private estates, until the World's Fair at Chicago in 1893. The Olmsteds were the landscape architects of the Fair, and the ground plan of it was made in their office. Five architects, chosen from different geographical districts of the United States, shared in the design of this ground plan, and they took over the design of the more important buildings. The ground plan was drawn up from various sketches of the Grand Court, after discussions with Mr. John Root of Chicago, Olmsted relocating the buildings. Mr. Charles McKim came frequently to Brookline to assist in the design, also Mr. Robert S. Peabody of Boston, and Mr. Augustus



GARDEN OF CHARLES W. HUBBARD, ESQ., AUBURNDALE, MASS.
Olmsted Brothers, Landscape Architects.

St. Gaudens, the sculptor, though the latter was too busy to give much time to the project.

In 1898, the senior Olmsted's younger son, Frederic Law Olmsted, Jr., joined the firm, after graduating from Harvard in 1894, traveling in Europe, and serving an apprenticeship in the nurseries of Mr. George Vanderbilt at Biltmore, North Carolina. "F. L." Jr., as he is popularly known by many of his fellow landscape architects, has occupied himself largely with town and city planning, and, in addition, has been the head of the School of Landscape Architecture at Harvard. Very recently, since the nation entered the world war, he has taken a prominent part in the planning of cantonments and housing schemes with the Council of National Defense at Washington.

With the entrance into partnership with Olmsted Bros. in 1906 of James Frederick Dawson and Percival Gallagher as associate members, the list of men who have been connected with the firm comprises seven—the three Olmsteds, and Messrs. Codman, Eliot, Dawson and Gallagher.



GARDEN AT NETHERMUIR—RESIDENCE OF H. W. DE FOREST, ESQ., COLD SPRING HARBOR, N. Y.
Olmsted Brothers, Landscape Architects.

Certain aspects of the Olmsted firm deserve notice. The elder Olmsted dealt largely with parks. Besides his first works and the work for the Metropolitan Park System of Boston, there were numerous projects of his in the Eastern and Western States. In Buffalo are to be counted also South Park and Cazenova Park. Delaware Park had been designed by Olmsted and Vaux and was revised by John Olmsted. It resembled Central and Prospect Parks in New York in that it was laid out after one plan, consistently and comprehensively carried out by landscape architects, not gardeners or engineers; and in that it was financed by large bond issues. The reservation around Niagara Falls is also another Olmsted work, planned by the elder Olmsted during his partnership with Vaux. In Boston, minor parks, like Charlestown Heights, Wood Island Park, and some playgrounds, are to be noted in addition to the work mentioned above. The Cambridge, Mass., system was designed by John Olmsted. In Chicago the Olmsteds had long relations. Olmsted and Vaux had laid out Jackson Park there, planning a canal connecting two parks. After the changes due to locating the World's Fair in Jackson Park, this park was redesigned for the second time, largely reverting to the original plan. With his father, Mr. John Olmsted drew the plans for parks in Portland, Oregon, in Seattle, in Spokane, and in Milwaukee; and with Mr. Codman's aid he schemed the Louisville parks entirely from the beginning. Also parks in Atlanta, in Charleston, Kentucky, and in New Orleans. Mount Royal Park at Montreal is another Olmsted design.

At Washington the Capitol grounds are largely the conception of the elder Olmsted, the terracing being designed by Thomas Wisedell, an English architect. In these Capitol grounds one cannot help regretting that Frederic Law Olmsted's devotion to the informal ideal carried him

too far. The imposing extent of walks nearly one mile long, with the great domed Capitol at one end and the tall Washington Monument at the other, creates an axis that cannot be ignored—not only an axis, but a demand for a vista. The planting of trees and shrubs shows, of course, all the Olmsted skill. But if one stands on the large mound at the base of the Monument, even the dome of the Capitol cannot be seen. The Capitol has no relation to the Monument or the other features of the Mall save that of being set in the same great space. It has no relation through an effect attained by any elements of architectural design. However this may be, one cannot praise too highly the planting of the White House grounds. There the lovely old masterpiece of earlier times stands out, framed by massed planting, simple yet quietly dramatic—rich masses of greens throwing into relief the beautifully proportioned white walls against the deep blue southern sky, in a flood of sunshine. Even during the long winter months the color is exquisite. The soft light violets and browns of differing species of trees, contrasted with a few evergreens, stand lace-like in front of the white walls; the sky still blue, but often with that violet blue, opaque instead of transparent, that one sees close to the horizon in Paris.



GARDEN AT NETHERMUIR—RESIDENCE OF H. W. DE FOREST, ESQ., COLD SPRING HARBOR, N. Y.
Olmsted Brothers, Landscape Architects.

More recently the Olmsteds have handled the parks in the Oranges, in Newark and in Essex County, New Jersey. This particular park system was begun about twenty years ago and is still being carried on by Mr. Gallagher. It is altogether a fine example of a park district, composed of parks connected by boulevards or parkways of the same type as those of the earlier Boston system.

But of late years the design of large public parks has languished. The reason for this is that most American cities have been provided with some sort of parks; but, more than that, the public has turned its attention to city planning and to playgrounds. Such needs are more pressing today. It is fortunate that Olmsted and his school—for his office may be said to be a school in which many members of the landscape professions received their training—were responsible for most of the best parks of our cities. Often, indeed, their loveliness is the sole ornament of their community, and it is to be regretted that contemporary engineers in their city plans and architects in their buildings fell so far below the standards set by the Olmsteds.

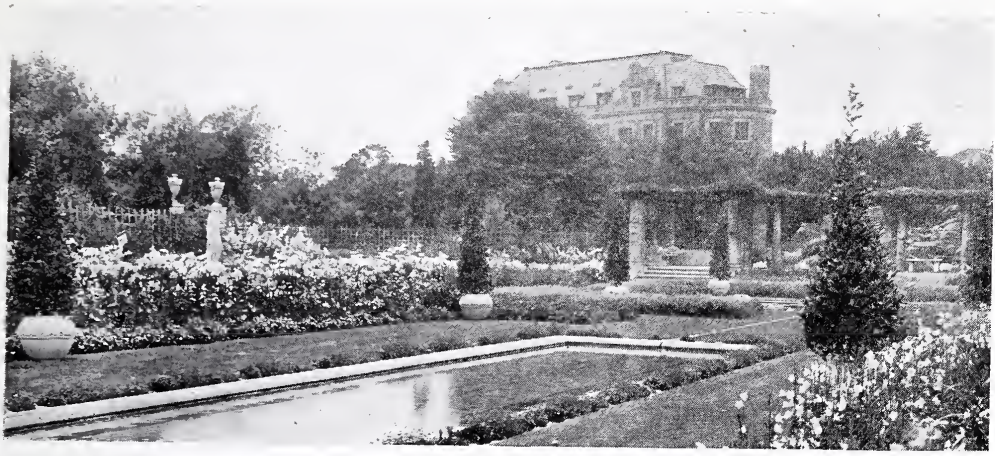
As heretofore noted, the elder Olmsted established a park tradition in America that was both naturalistic and practical. In each case the design was an expression both of the topography and of its flora; and, in addition, the practical needs of communication or recreation were explicitly provided. If the park had several different functions to perform, each function was clearly perceived and coherently provided in a well co-ordinated and subordinated scheme. In this, as



PERGOLA IN THE BLUE GARDEN, BEACON HILL HOUSE, NEWPORT RESIDENCE OF ARTHUR CURTIS JAMES, ESQ.



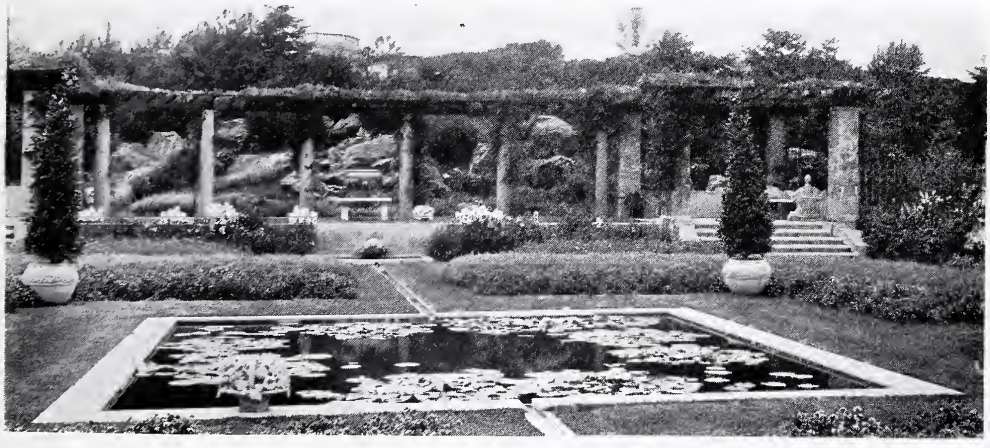
PERGOLA AT BEACON HILL HOUSE, NEWPORT RESIDENCE OF ARTHUR CURTIS JAMES, ESQ.
Olmsted Brothers, Landscape Architects.



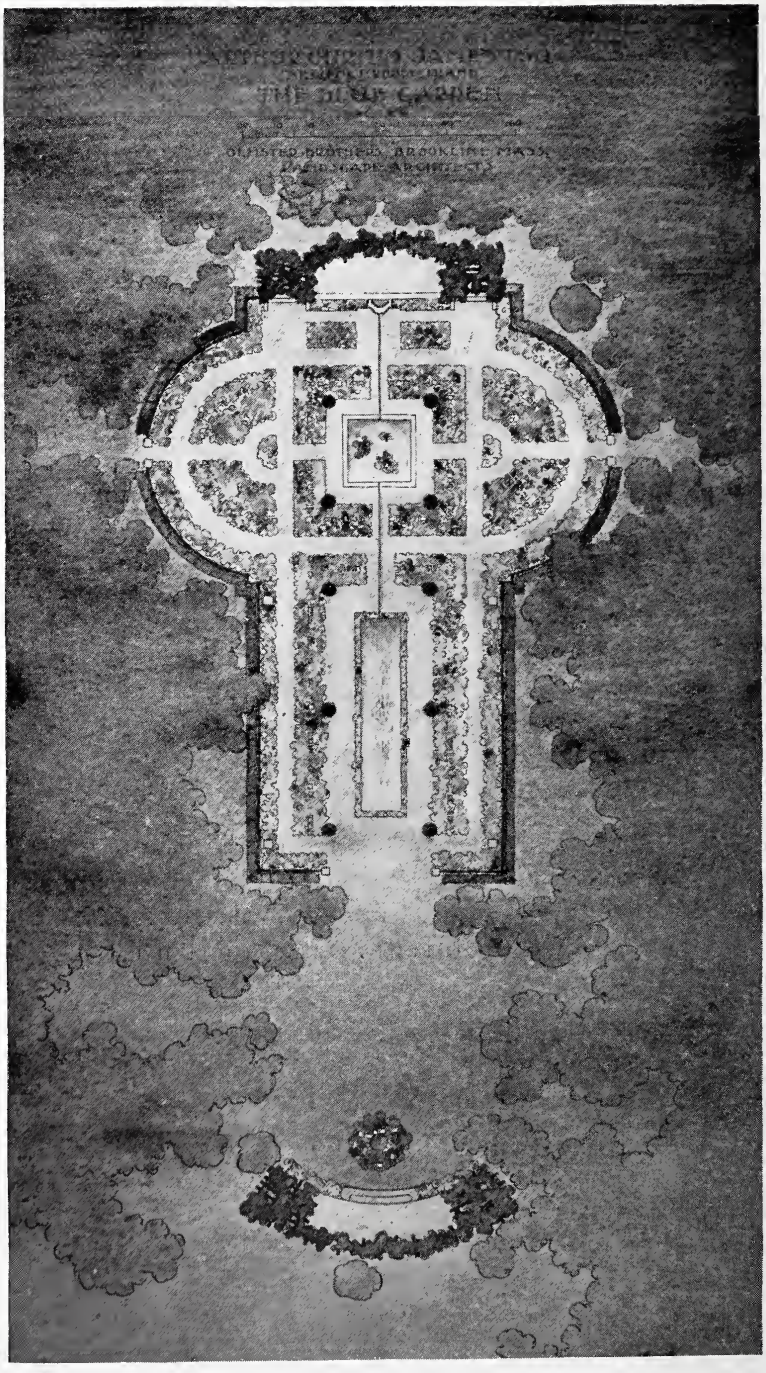
VIEW OF GARDEN AND HOUSE, BEACON HILL HOUSE.



GENERAL VIEW OF GARDEN AT BEACON HILL HOUSE.



PERGOLA AND ONE OF THE POOLS AT BEACON HILL HOUSE, NEWPORT RESIDENCE OF ARTHUR CURTIS JAMES, ESQ.
Olmsted Brothers, Landscape Architects.



GENERAL PLAN OF THE BLUE GARDEN AT BEACON HILL HOUSE, NEWPORT RESIDENCE OF ARTHUR CURTIS JAMES, ESQ. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



"FERNWOOD"—ESTATE OF ALFRED DOUGLAS, ESQ., BROOKLINE, MASS.
Olmsted Brothers, Landscape Architects.



BOULDER SLOPE AND STEPS—ESTATE OF ALFRED DOUGLAS, ESQ., BROOKLINE, MASS.
Olmsted Brothers, Landscape Architects.



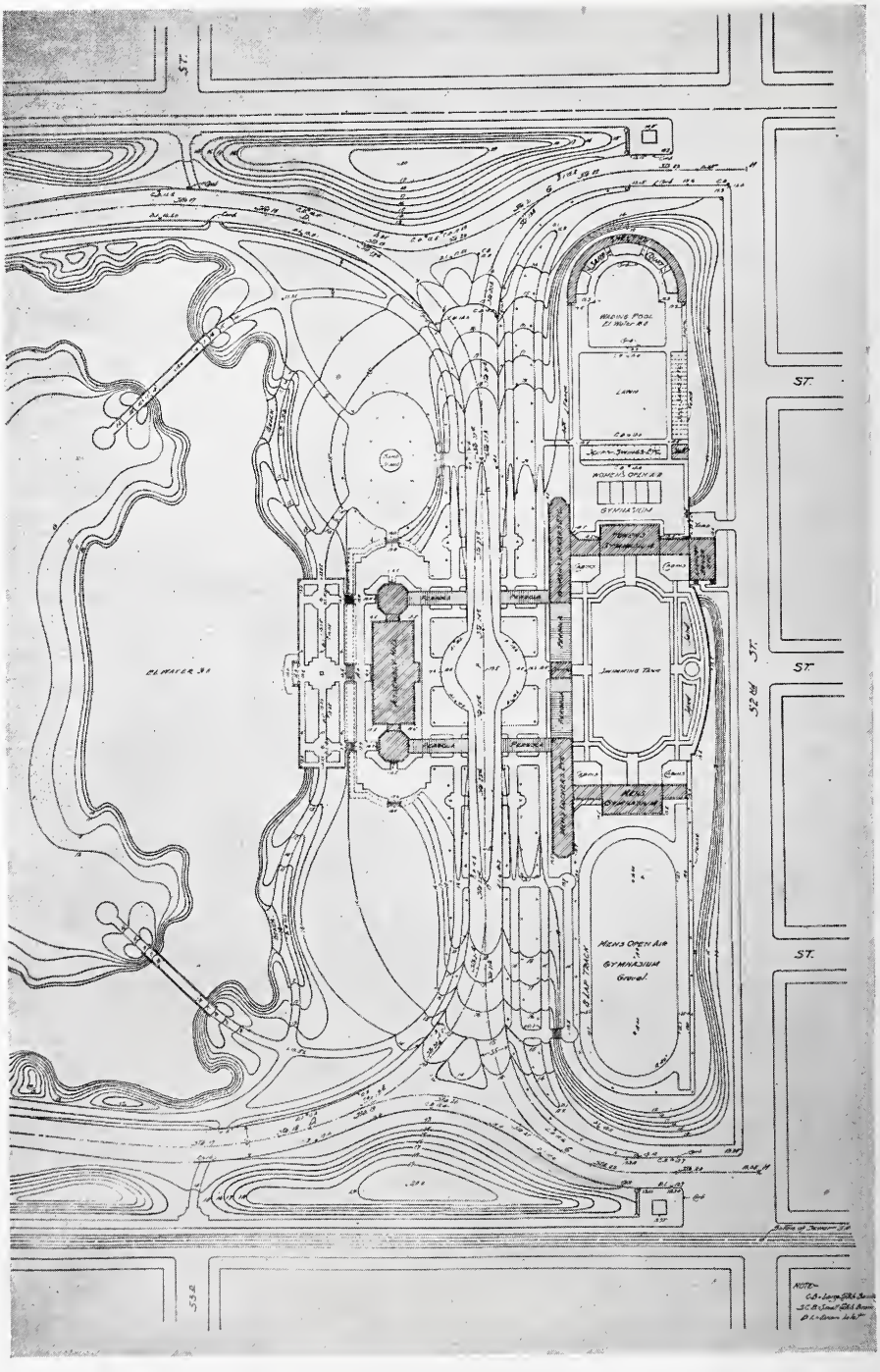
THE TERRACES IN RELATION TO THE HOUSE—RESIDENCE OF JAY COOKE, ESQ., CHESTNUT HILL, PHILADELPHIA. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



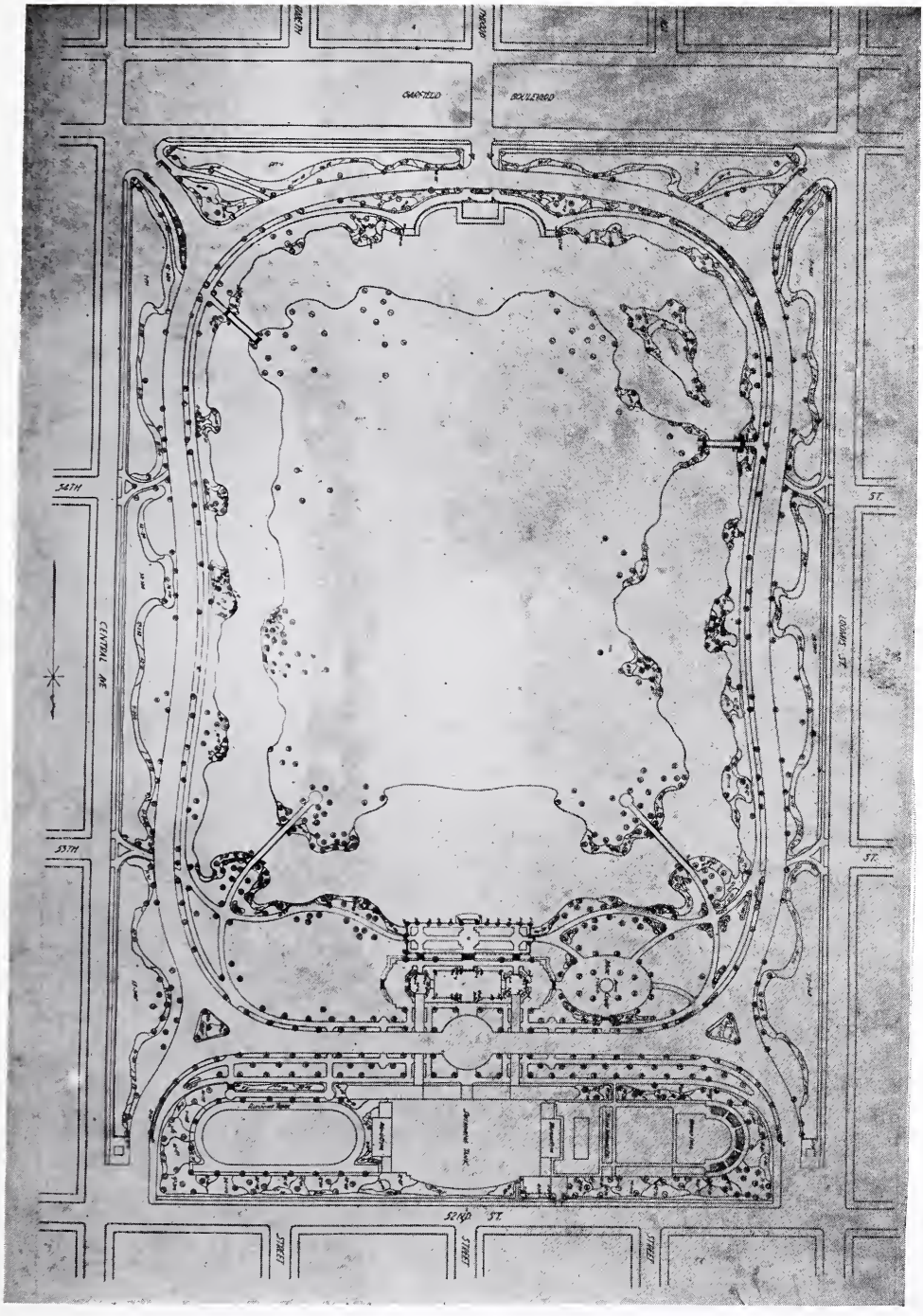
UPPER TERRACE AND DINING ROOM ENTRANCE—RESIDENCE OF JAY COOKE, ESQ.



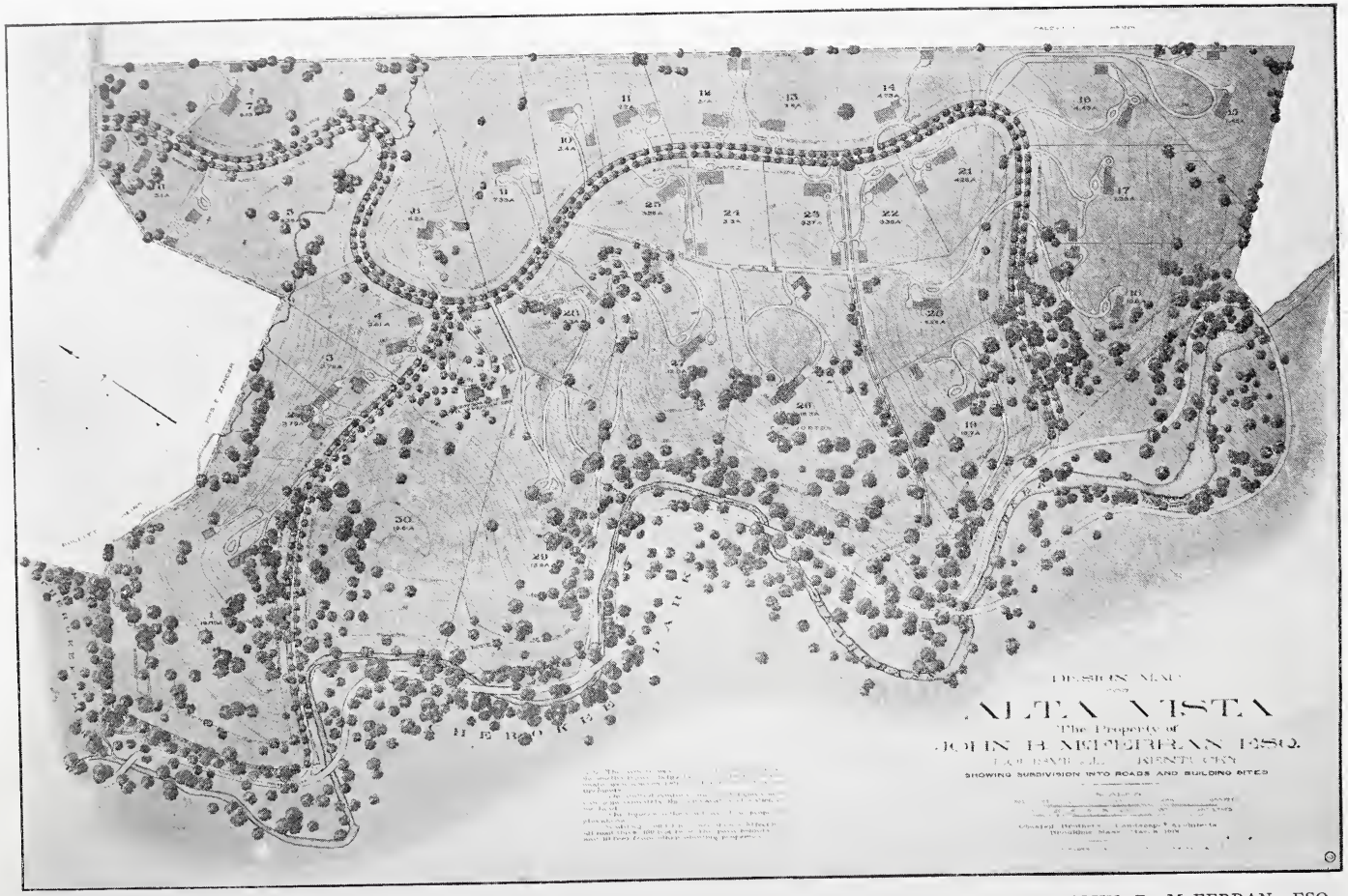
THE TERRACE FROM UPPER LEVEL—RESIDENCE OF JAY COOKE, ESQ.,
CHESTNUT HILL, PHILADELPHIA.
Olmsted Brothers, Landscape Architects.



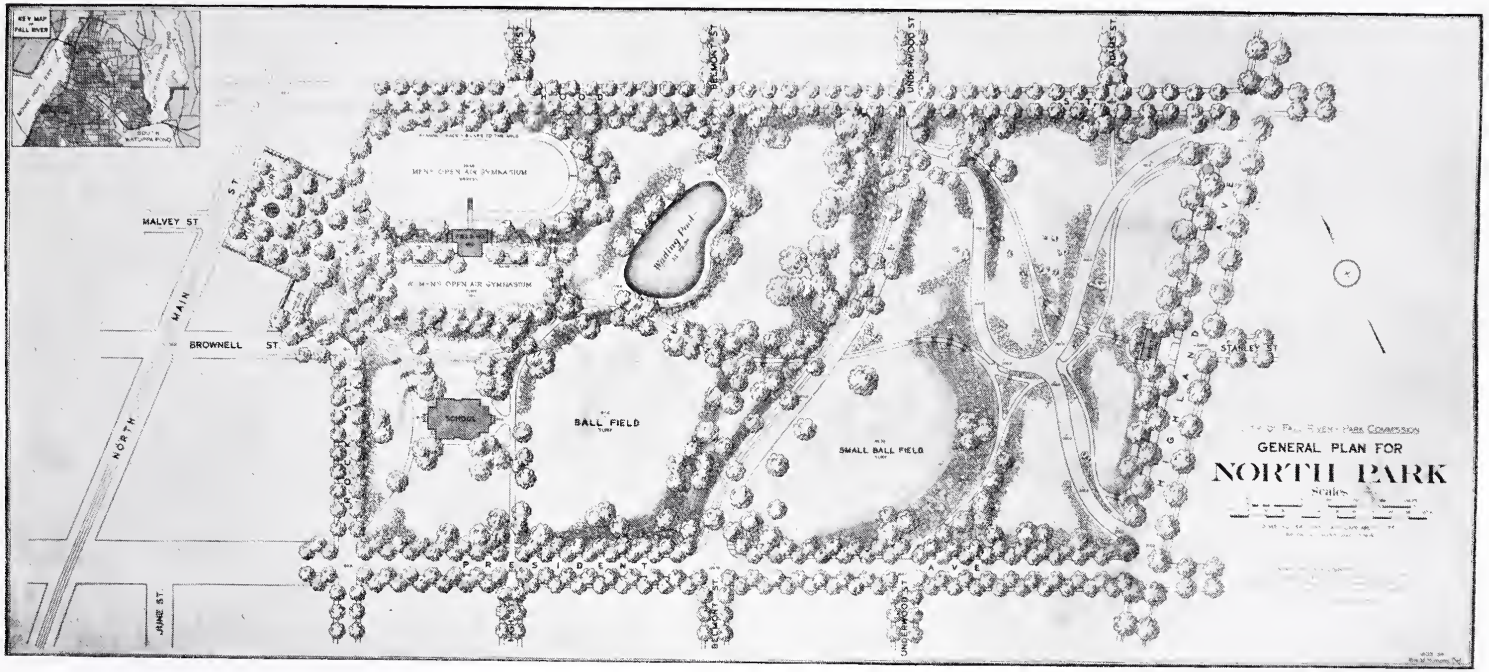
ALTERNATIVE GRADING PLAN (ADOPTED) FOR THE NORTH END OF SHERMAN PARK, CHICAGO, ILL. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



PLANTING PLAN FOR SHERMAN PARK, CHICAGO, ILL. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



PLAN OF ALTA VISTA, ESTATE OF JOHN B. McFERRAN, ESQ., LOUISVILLE, KY. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.



NORTH PARK, FALL RIVER, MASS.—A PLAYGROUND PARK. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.

NOTE.—The site was unsuitable for a park, but was considered by the city authorities the only one available. The grade school had to be retained, and a city traffic street provided across the middle of the park, which was to be mainly for playground purposes. The music court is at an elevation of 31 feet; the highest corner of the park is 211 feet, a difference of 180 feet. These facts explain the unusual character of the plan.

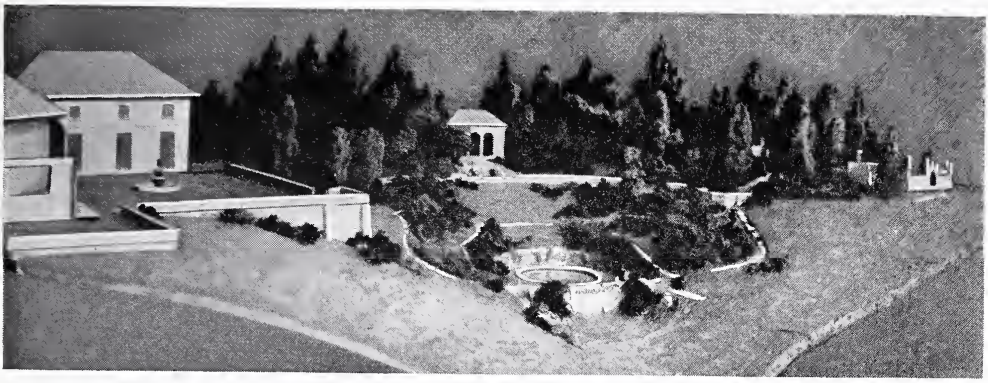


MODEL SHOWING PROPOSED TREATMENT NEAR HOUSE—RESIDENCE OF ALFRED E. DOUGLAS, ESQ., BROOKLINE, MASS.
Olmsted Brothers, Landscape Architects.

in other respects, it was a real work of art. The true principles of organization lie deep in the mystery of art. To take one example of Olmsted's art, no better could be found than the three-mile strip of Parkway connecting the Boston Fens through Brookline and Jamaica Plain with Franklin Park. Much more than a connecting link, it fulfills a remarkable array of purposes. Contracting and expanding with the original topography, that of a sluggish stream winding down, vile with many sewers, this parkway is today a series of admirably designed little neighborhood parks, serving several well populated districts. These are closely knit together by the stream and its ponds, some of them lakelets; by motor roadways, a bridle path, by walks; and, for over a mile of its length, the Boston and Albany Railroad skirts it on one side. Olmsted boldly took the railroad right into the parkway scheme, hid its rails behind a low, thickly planted dike, which serves to increase the height of the banks of the stream. A walk separates the top of the original bank of the stream from the dike. The charming little Longwood suburban station is cleverly worked into the plan, unobtrusively fitted into the sloping ground beside the masonry arch of the Longwood bridge, tawny-colored against the green foliage. Along the whole parkway, in the course of years, numerous schools, hospitals, churches, playgrounds, private estates have been located, until the strip of this parkway



MODEL SHOWING PROPOSED TREATMENT NEAR HOUSE—RESIDENCE OF ALFRED E. DOUGLAS, ESQ., BROOKLINE, MASS.
Olmsted Brothers, Landscape Architects.



SKETCH MODEL SHOWING TREATMENT OF GROUND AT HEAD OF RAVINE—RESIDENCE OF WALTER JENNINGS, ESQ., COLD SPRING HARBOR, N. Y.
Olmsted Brothers, Landscape Architects.

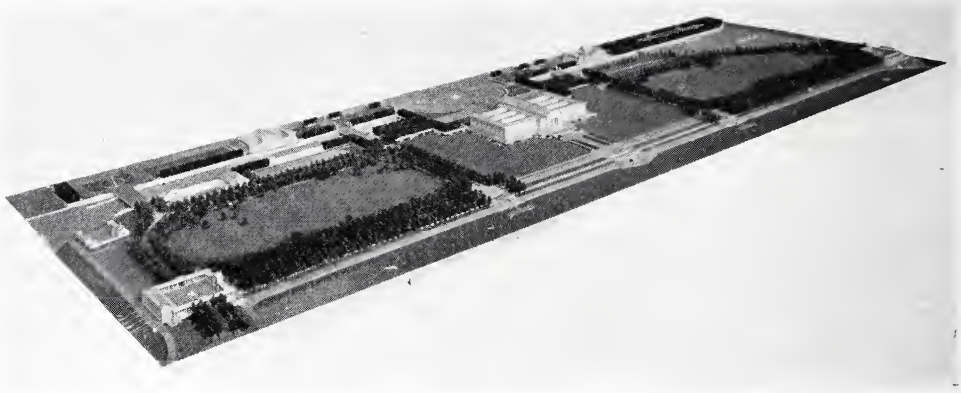
neighborhood forms one of the finest bits of community in the country.

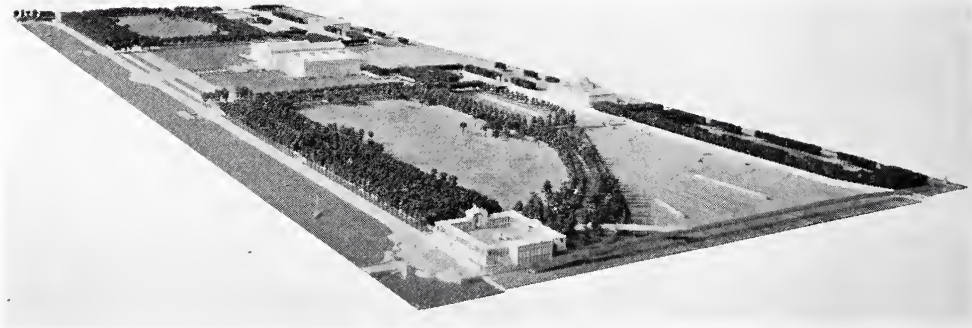
The elder Olmsted grasped clearly the social aspect of park work. He felt keenly the duty of civilization to develop the physique of the people. This view led him easily into the modern movement for playgrounds, in which he strove to lead the park commissions. Although this social idea is now well accepted, the earlier park commissions resisted it. The first commission to adopt it, though its members dared not push it too far, was the admirable South Park Commission of Chicago. This body bought up valuable land for the purpose of providing playgrounds near schools and in crowded districts. It took up vacant lots where it could and strove to be business-like in its finances. In fact, the South Park Commission has set the standard for such public work in America. Powerful, well-educated, it has the right of absolute control over the east and south districts of Chicago, and it maintains the very best and completest system of parks and playgrounds in the country, in design, construction, equipment and maintenance. It was the South Park Commission that built the groups of bath-houses, open air swimming pools, the gymnasium and community houses designed by D. H. Burnham & Co. and by Edward H. Bennett that are so well



SKETCH MODEL SHOWING TREATMENT OF GROUND AT HEAD OF RAVINE—RESIDENCE OF WALTER JENNINGS, ESQ., COLD SPRING HARBOR, N. Y.
Olmsted Brothers, Landscape Architects.







MODEL SHOWING TREATMENT OF PROPOSED LOCATION FOR FIELD COLUMBIAN MUSEUM IN GRANT PARK, CHICAGO, 1908. OLMSTED BROTHERS, LANDSCAPE ARCHITECTS.

NOTE.—The project of locating the Museum in the Park was set aside by an injunction obtained by a property holder and sustained by the Supreme Court. The railroad right of way below street level is that of the Illinois Central Railroad.

known to the architectural profession and which have often appeared in the pages of the Architectural Record. Once Olmsted Brothers drew plans for thirteen of the Commission's playgrounds in thirty days, of which two were executed, each about thirty acres in extent.

Most of the Olmsted playgrounds are located in Boston, about a score of them, designed in the late eighties and early nineties. The first, the Charlesbank, is historic, for in it, in 1878, Frederic Law Olmsted brought out the first modern playground conception. He proposed not merely a complete gymnastic equipment for the playground, but an athletic director to be in charge and also a women's society to make use of it. In accepting this scheme the authorities yielded less to Olmsted's idea than to the force of his personality. Those interested in playground design will find much of value in the appendices of the Boston and Buffalo Park reports written by the elder Olmsted and his son John, who wrote all those after 1890.

As we have seen, the recent work of Olmsted Brothers has lain in the public and government work of city planning and of housing, carried on by Frederic Law Olmsted, Jr., besides the design of private estates. Mr. Gallagher is active in this latter field, and it was he who designed the admirable garden of the Rogers house at Southampton, Long Island. He has lately concerned himself with the landscape work of some large residences, of which Mr. Bertram Goodhue is the architect. Following the taste of the day in this private work, large formal gardens are often laid out, in contrast to the more naturalistic bias of the earlier designs of Olmsted Brothers; but, as may be imagined, the powerful original impulse of the firm sets itself strongly against any excess of artificiality. Nor, of course, would the New England tradition of Puritanism and good breeding brook any theatrical elements, too often to be found in the gardens of those who wish to have but do not know how.

The work of the Olmsted firm presents itself as a continuous activity extending over fifty years, started by the impulse of Frederic Law Olmsted's powerful, adventurous personality almost creating the profession of landscape architecture in this country—an activity continued up to the present time by his sons and their associates. The catalogue of their works is an impressive list. Besides designing the grounds of countless private estates, they took part in the planning of or consulting on layouts of forty cities; two hundred and sixty squares, playgrounds, parks or similar public works, and sixty universities and schools. Mr. John Olmsted has been the one responsible for the planning of educational institutions. But more important than the volume of the work done is the way the members of the Olmsted firm have done it. They form a little group of men insisting on the very highest standards of professional achievement, balancing art with common sense and American resourcefulness, and, in a broader way, always seeking new fields of effort for their profession. They knew how to cooperate with contemporary artistic and literary circles in moderating the crudeness of nineteenth century industrialism in America.



GENERAL VIEW OF B STREET ELEVATIONS, WITH NAVY BUILDING IN FOREGROUND—OFFICE BUILDINGS, AT WASHINGTON, D. C., FOR THE NAVY AND WAR DEPARTMENTS.



The NEW OFFICE BUILDINGS AT WASHINGTON, D.C. *for the* NAVY *and* WAR DEPARTMENTS

By George P Hales

[*The necessity of speed, of stringent economy, and of utilizing such raw materials as were available in bulk without intermediate manufacturing processes, was the governing factor in the design and architectural treatment of the buildings described in the following article. While the structural framework is of the most enduring character, the buildings are not intended to be permanent; and the whole design, both in plan and in elevation, was influenced by this idea. The buildings may be cited as evidence that concrete, when properly handled, can be made to express architectural inspiration of a high order.—Editor.*]

THE congestion of work and workers which war necessities have imposed on the administrative departments has put the Government to some strenuous shifts to get its business activities under roof. Rentals, commandeering of finished and unfinished buildings, and "emergency" construction have all played their part in this struggle for accommodations.

The typical temporary structure is seen on every hand throughout downtown Washington. One noted example was built to house the labors of no fewer than ten thousand employees. All are vast buildings erected almost over-night, occupying every vacant tract adjacent to the parent departments.

With the exception of the new temporary office buildings for the War and Navy Departments, these hastily-built structures have been of frame construction veneered with pebble-dash. Some are two stories in height and some three, but have the same general appearance, though varied somewhat with colonnaded entrances or pediments at the central portions.

Being of wood throughout, with the possible exception of masonry fire walls contained in a few, they are necessarily subject to the hazard of rapid destruction by fire. Preventives of this peril, such as sprinkler systems and fire escapes, have been installed with great care to reduce the risk to a minimum and to in-



MAIN ENTRANCE—PAVILION OF NAVY BUILDING, WASHINGTON, D. C.

sure as far as possible the safety of the valuable records and documents on file in the various bureaus.

Long having outgrown its original quarters even in peace times, and being established inadequately in rented buildings throughout the city, the Navy Department was greatly handicapped in prosecuting the multiplied volume of work that devolved on its offices as the war progressed. New quarters became imperatively necessary, and the problem of providing such quarters in the absolute minimum of time was squarely faced by this department last February.

It was desired that the whole department be located under one roof for the sake of coordination in the administration of its affairs. This, it was found, would require a building larger than any previously built for such purposes. It would have to be more than temporary in construction on account of the vital importance of the work and documents of the various bureaus making up the department.

At this point an original solution suggested itself. The feasibility of using concrete was investigated, and it was found that a structure built of such material could be erected at a cost not unreasonably above that of an equivalent frame building. Investigation also proved that, with the cooperation of the Government, regular transportation and prompt delivery of material could be guaranteed, so that one of the chief obstacles to speedy construction could be disregarded. The resources and facilities of a great construction company were enlisted, and in this way the necessary labor was assured to carry out the project as listed on a specific time schedule.

Presented with such data, Congress was asked to provide the necessary funds, and saw fit at the same time to provide additional office space for the War Department upon the same basis, thereby relieving the crowded condition in which this department found itself even after the occupation of acres of new floor space.

It was provided in the bill enacted at that time that the buildings should be erected upon public lands bordering Po-

tomac Park and also that the buildings should be harmonious in design and character with the permanent structures in the immediate vicinity.

The Bureau of Yards and Docks of the Navy Department was entrusted with the work of preparing plans and supervising the construction of the buildings. Speed in erection, being the essential factor, implied that the structural design should be of the simplest type; and it was found that the beam-and-girder type of concrete construction most satisfactorily answered this demand. This treatment resulted in a system of uniform structural units; all column spacing and distances between girders being similar without exception. No complicated connection of beams or girders at columns was permissible, which fact alone held the architectural design down to certain indisputable conditions and prohibited the usual breaks and offsets so desirable in a design of great expanse. As will be seen in the accompanying photographs, the two buildings are identical in appearance, the front and side façades being divided into bays by pilasters. The monotony of the design is broken by the introduction of pavilions at the centers and ends, producing harmonious features for the entrances.

The elevations of the buildings, being low in proportion to their enormous lengths, are heightened in appearance by the two-storied window treatment, which gives the effect of single openings of proper proportions extending from the first to the second stories.

Necessary economy and speed of construction prohibited the use of deep window reveals, which would have added greatly to the effectiveness of the design.

All exterior moldings are of concrete, which permitted the introduction of only the most simple types. They were designed so that the wooden forms used in their construction might be of merchantable stock, and that these forms could be stripped from place without injury to the moldings. They count sufficiently in detail, however, to give a pleasing architectural character to the whole composition, and they are placed only where their use would count the most. The line drawings show in detail the peculiar



VIEW ALONG B STREET, SHOWING END ENTRANCE OF NAVY BUILDING, WASHINGTON, D. C.

characteristics of these moldings, such as the sloping offsets to permit the stripping of the wood forms.

The first floor of the buildings rests on the natural average grade of the site; and to give a proper base to the design, the parking space has been excavated to form a sunken terrace along the fronts. The top of the terrace, so produced, will later be planted with hedging to make a pleasing transition between the sidewalk and the buildings.

The window spandrels at the second floor are of metal, molded and panelled, and painted dark green to match the doors and other exterior trim.

All concrete surfaces are treated with a white cement and sand mixture rubbed into the material by hand, giving the entire surface a uniform texture.

The proper natural lighting of all rooms governed the shape of the plan, which consists of a series of wings connected at the fronts by what are termed the "headhouses."

The headhouse of the Navy Building extends along B Street for a distance of 860 feet, while that of the War Buliding extends 780 feet along the same street. The wings project to the south a distance of 500 feet, each wing being sixty feet wide and separated from the next by a court forty feet in width. The two buildings have a combined floor space of forty-one acres.

All floors are of reinforced concrete, designed to support a live load of seventy-five pounds per square foot, and are finished with a wearing surface of the same material. This finish will be covered with linoleum as soon as it is possible to procure the material required, amounting to something over 143,000 square yards.

The dividing partitions in general are of wood studs having a gypsum-board base for the plaster finish. At intervals, partitions of a fireproof material are built, dividing each floor into sections so as to localize any fire that might occur. All openings in these partitions have automatic firedoors, thus making each section an independent compartment. Concrete staircases are so placed that egress from one section may be had without passing through any of the others, thus affording ample protection in case of emergency.

Both buildings have in the center of the headhouses large vestibules entered by nine double doors, giving free passageway under the most difficult conditions. Opening from the vestibules are the main staircase halls, of such dimensions as to admit of the transaction of preliminary business concerning identification and similar matters.

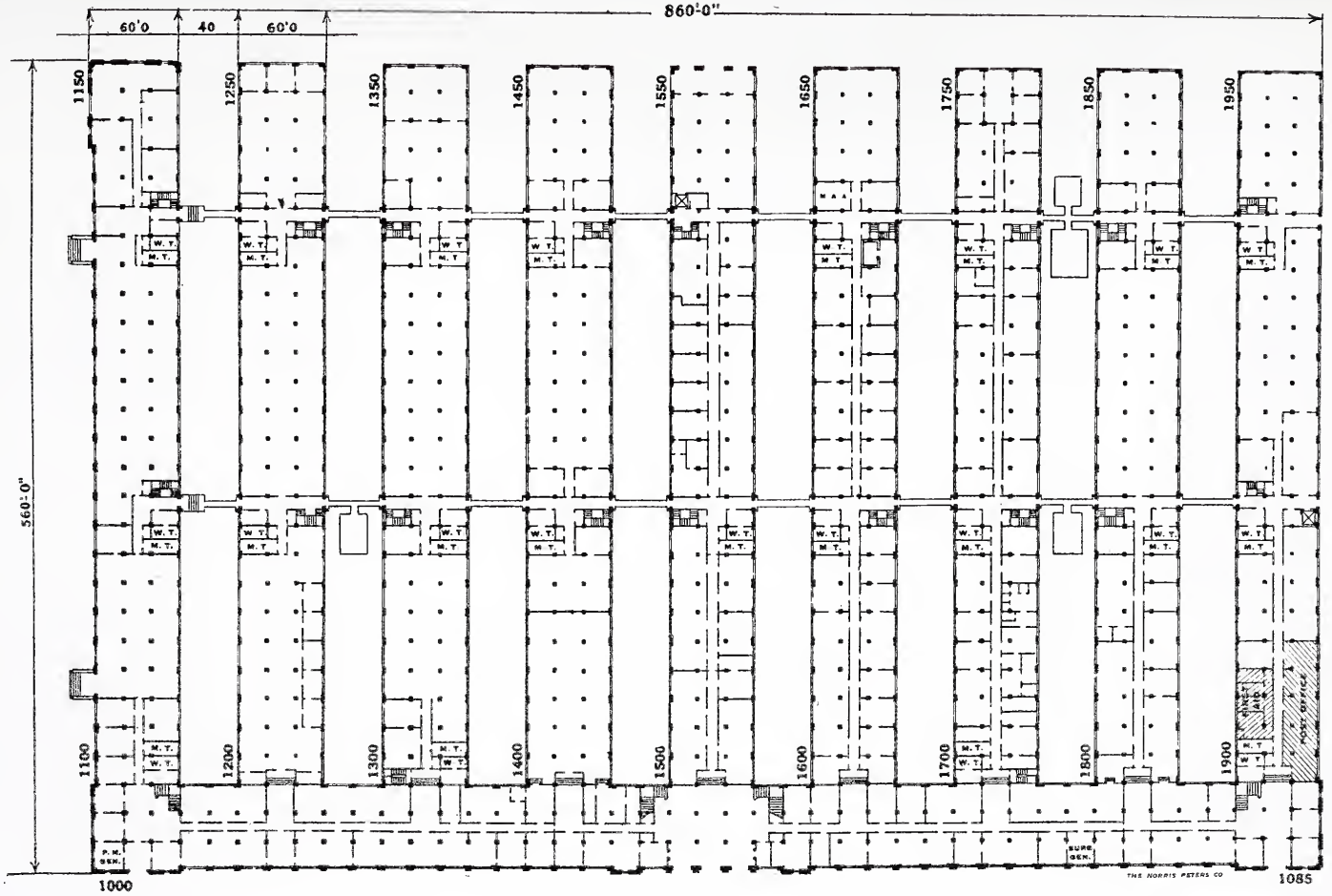
The vestibules and halls present a finished appearance, having plaster walls and ceilings with embellishments of columns, pilasters, and cornices. A durable floor is provided in these rooms, consisting of cement and small pebbles—the latter being treated so as to give a pleasing finished texture and color to the surface.

The corridor partitions have an unusual amount of glass area, which makes the corridors cheerful and pleasant even on the dullest days. Staircases are all of reinforced concrete, and are particularly wide—these being the only means of travel from one floor to the other. Steel sash is used throughout, since this type of window is well adapted to concrete construction. Its adaptation insured speed in erection, provided large light areas, and affords (where glazed with wire-glass) a considerable amount of fire protection.

The floors are subdivided to meet the particular needs of the various bureaus, but so arranged that access may be conveniently gained to any and all parts of the buildings.

The office rooms are plain, well lighted, and of workable proportions. Only the interior partitions forming these offices are plastered, the inner surfaces of exterior walls showing the structural concrete. Water color paint is used throughout on the walls and ceilings, making the texture of these surfaces harmonious and effective.

The suite of rooms assigned to the Secretary of the Navy and his working force has an individual treatment, though of modest design and material. Ornamental

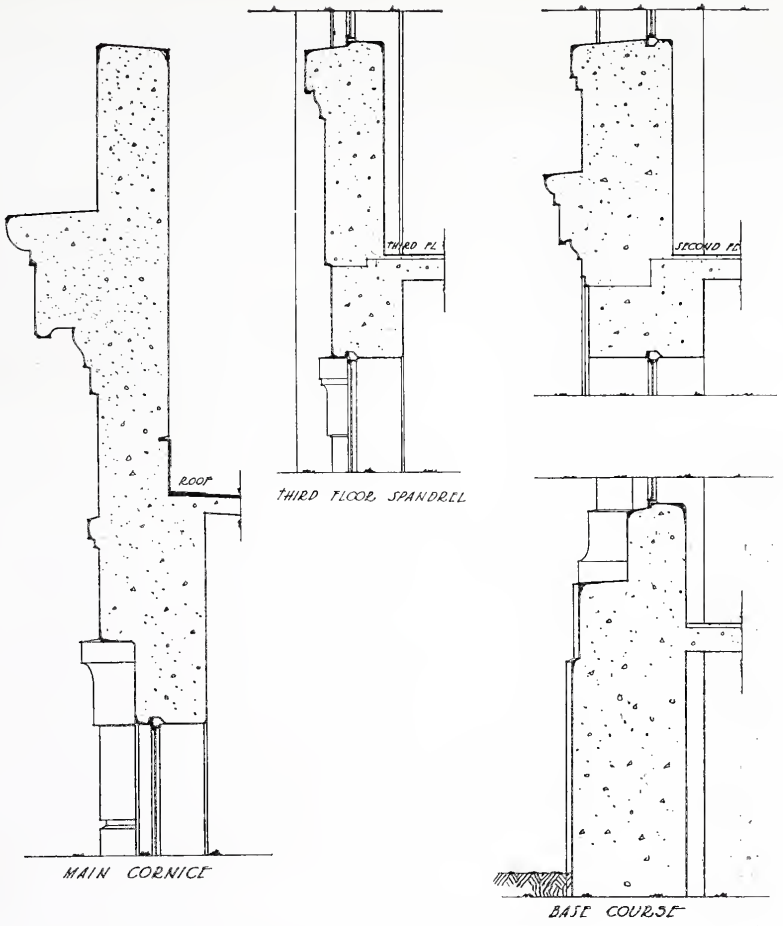


FIRST FLOOR PLAN—NAVY BUILDING, WASHINGTON, D. C.

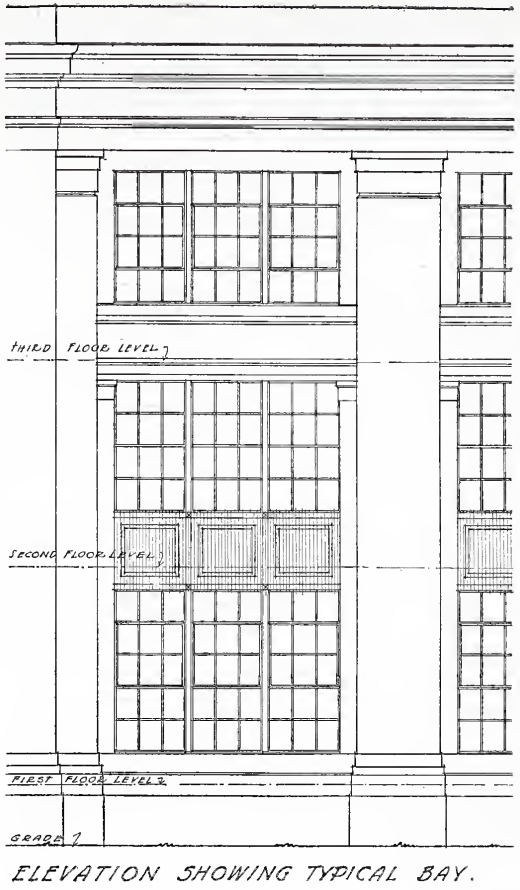


ELEVATION AT MAIN ENTRANCE.

ELEVATION AT CENTRAL PAVILION—WAR AND NAVY BUILDINGS, WASHINGTON, D. C.



SECTIONS OF CONCRETE MOLDINGS—WAR AND NAVY BUILDINGS, WASHINGTON, D. C.



ELEVATION OF TYPICAL BAY—WAR AND NAVY BUILDINGS, WASHINGTON, D. C.

plaster cornices decorate this suite, together with presentable fireplaces and mantels and cork tile floors.

The buildings, being located some distance from the center of the city, and consequently inconveniently situated as regards restaurants, have large and well-arranged cafeterias to accommodate the many clerks during the limited period allowed for luncheon. Occupying the third floor of an entire wing in each building, the cafeterias are of such size as to provide service for thirteen hundred patrons at one time without confusion or apparent haste. The most modern mechanical cooking devices are in use in the kitchens, which were planned from data gained through an investigation of the largest cafeterias in the country connected with industrial institutions.

The toilet facilities are carefully placed and equipped with a substantial standard grade of fixtures. These rooms are exceptionally well lighted and ventilated, and are generous in size. The women's toilets have rest-rooms adjacent, a necessary adjunct in a building of this character.

Numerous ice-water fountains are conveniently placed in the corridors. Added protection from fire is furnished by the installation of a modern fire-alarm system.

Two elevators, electrically controlled and operated, are located in each building for the purpose of handling freight. No passenger elevators are provided, the height of the building not warranting their use.

A low-pressure vacuum-return steam system is used for heating the buildings, the live steam being furnished by privately-owned local power company. This steam is transmitted from the point of supply, a mile distant, to the building by means of underground steel piping, each length of pipe being welded to the next and expansion joints being inserted at regular intervals.

The telephone system of the Navy Building is controlled from a large exchange located in the center wing of the first floor, and provides a complete intercommunicating system in addition to the usual outside service.

This building also has its own post-office, equipped and maintained as a branch of the city post-office. It is complete in every detail, and so arranged as to handle expeditiously the enormous amount of mail passing through the department each day.

To accommodate the large number of automobiles usually parked in the neighboring streets, a storage space for the purpose is provided at the rear of the building. This space is large enough to accommodate five hundred machines, and is inconspicuously enclosed by tall wire fencing. Gateways at various points, attended by guards, control the passage of the machines, a pass system insuring their safety at all times.

Considering the time and labor involved in such an enormous operation as the War and Navy Buildings it will perhaps stand out as one of the great achievements "over here" during the war.

Accommodating no less than 15,000 war workers, it will be readily seen that the hitherto congested conditions in Washington are greatly relieved, thus adding to the efficient administration to war needs. Preliminary work was started on the plans late in February of this year, and actual construction began about the first of April. The buildings are now entirely occupied, the first bureau having been installed on August sixteenth.

To hasten the construction, a most thorough organization was planned and the most modern methods known in building construction were adopted to provide every possible means of facilitating the work.

The handling of the great quantity of concrete materials expeditiously was a problem in itself, and to manage this phase of the work a heavy wooden trestle for auto trucks was built along the rear of the site, this trestle being a third of a mile in length. At intervals, ingenious dumping stations were arranged in order to distribute the material conveniently.

The fact that rooming accommodations for war workers in the city were already at the straining point necessitated

the construction of living quarters for the workmen, who had to be imported in large numbers. They were provided complete commissary arrangements which supplied the men with substantial food and in every way catered to their comfort.

The buildings as they now stand completed are well adapted to the ends intended, and provide working accommodations suited to the particular needs of the departments and bureaus occupying them.

The design, while Governmental in character, is simply an arrangement of masses unifying the various parts of the composition. It is an interesting example of the possibilities of design as applied to a concrete structure, and creates a favorable comparison with buildings of similar type of more expensive materials.

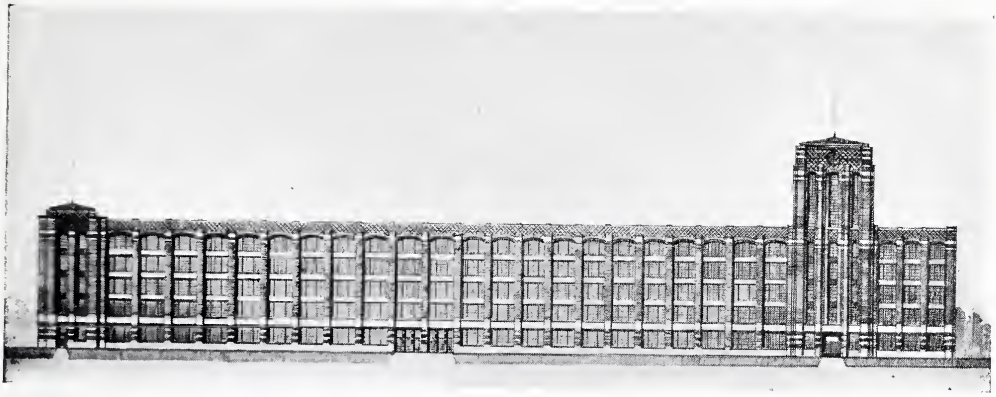
The project was carried out under the general supervision of Commander A. L. Parsons, Civil Engineer Corps, U. S. N., with Lieutenant Commander O. A. Mechlin, U.S.N., as the Officer in Charge. The architectural features of the design were developed and passed upon by a committee from the Bureau of Yards and Docks, composed of Lieutenant Commander F. W. Southworth, U.S.N., and Messrs. Charles H. Stratton, George P. Hales and H. J. Briggs.



NAVY BUILDING, FROM GROUNDS OF PAN-AMERICAN BUILDING.



ENTRANCE DETAIL—C. A. BREWER BUILDING,
CHICAGO. ALFRED S. ALSCHULER, ARCHITECT.



SKETCH FOR PROPOSED ADDITION TO BURROUGHS ADDING MACHINE CO.'S PLANT.
Albert Kahn, Architect.

MODERN INDUSTRIAL PLANTS— By George C. Nimmons, F.A.I.A.

Part II.

UNDOUBTEDLY, the two aspects of this subject that give the greatest concern now are (1) what are the main features that have brought about the highest development in modern industrial plants, and (2) how best can war plants, in many cases hastily put up, be transformed so as to incorporate in them the largest proportion of these features in connection with the production of other things which they may now undertake to manufacture?

With the object in view of contributing as largely as possible to the answer to these two important questions, it is proposed to discuss the features of greatest value as represented in some of the most modern plants under the headings given below, and to illustrate the discussion with examples of the best industrial work by different architects.

I. TYPES OF INDUSTRIAL PLANTS:

General description of the various kinds of buildings erected by the different industries; discussion of the character of buildings adopted; the effect of city and country locations.

II. ESSENTIALS FOR THE SELECTION OF SITES FOR INDUSTRIAL PLANTS:

Center of the market for the sale of the product; accessibility of materials consumed; transportation; possibility of securing the most suitable employes; favorable building conditions and power requirements; room for expansion of the plant; proper foreground and landscape effects; out-door recreation; housing employes.

III. PLAN AND DESIGN OF THE BUILDINGS.

The vital importance for the most successful operation of having the arrangement and design of the plant specially and properly adapted to the efficient conduct of the business. The essential principles in planning and designing industrial buildings, their relation to manufacturing processes, handling goods and materials; their effect on the work of employes. How to go about securing the best plan and design of the plant. The selection of the most suitable type of construction and the various materials involved. The layout of floor plans for the buildings; column spacing; the determination of the practical location for stairways, elevators, vertical conveyors and spiral chutes; discussion of the various types of windows and the most durable wearing surfaces for floors; the making of plans to show the routing of material and goods as they travel through the processes of manufacture

of the plant; mechanical handling of materials and products. Mechanical features of the plant. Fire prevention and safeguarding employes. Health contributing devices for employes; disposal of injurious dust, gases and chemicals. Discussion of the various styles of architecture adapted for industrial plants; landscape work of the grounds.

IV. THE TURNOVER OF LABOR.

The growing importance of the subject; causes of its increase. Features in industrial plants that have been found effective in reducing the amount of labor turnover. Essential provisions for employes; proper entrances, exits, stairs, elevators, toilets, drinking water, and well adapted working spaces with proper heat, light and ventilation. Efforts and influences to make all work interesting. Welfare work; the modern attitude toward it by employer and employes. Rest rooms, lunch and recreation rooms, outdoor recreation, hospitals, medical care and supervision. Apprenticeship schools; general educational and entertainment activities. Accident and sickness insurance; old age pensions. The opinion of David Lloyd George of welfare work.

V. SPECIAL DISCUSSION AND ILLUSTRATION OF IMPORTANT FEATURES THAT HAVE PROVED TO BE UNUSUALLY SUCCESSFUL IN CERTAIN NOTED PLANTS.

VI. THE TRANSFORMING OF WAR PLANTS FOR NEW KINDS OF PRODUCTION.

Changing the buildings so as to accommodate new kinds of manufacture. Converting machine shops to other kinds of buildings. Suggestions for increasing space where needed. Salvaging of temporary buildings to the best advantage and the utilization of the material for permanent buildings.

VII. CONCLUSION.

The training of architects by the Architectural Schools of America founded and maintained on the basis of assisting the industries. The relation of the present practice of architecture to the industries. Summary of those features that have contributed most to the highest development of industrial plants.

I. TYPES OF INDUSTRIAL PLANTS.

Each kind of industry has established a certain type of building or plant that is supposed to be best suited for its purpose. Among these various types of buildings some have been developed and improved far more than others. The industries that have been given the most thought and attention in modern times are the steel and metal industries.

Concerns that manufacture large metal units demand a suburban or country site for great one-story, skylighted steel skeleton buildings—for rolling, casting, forging, machining and assembling of the parts of the output. The small unit metal manufacturing is done in all sorts of buildings; but one kind of building, usually well adapted for this sort of production, is the one-story, saw-tooth, skylighted building. This type of building may be of unlimted solid area, without any interruptions of interior light courts and consequently with the opportunity of routing the manufacture of the product in a circle, or forward and back, or laterally from front to rear or in any way desired to secure the most logical and direct way of working up raw material into the finished product of the shipping and stock rooms. Such industries are often also accommodated in city locations, in buildings of even more than six or eight stories in height. Sometimes a machine shop can be well arranged to operate vertically from one story to another, and it is not uncommon to find a foundry of a material capacity located in the top story, with its furnaces shooting the objectionable gases high into the air where they will best disappear.

The industries producing food are, of course, of the first importance. They have a most varied class of workshops. Beginning with a loaf of bread and tracing these industries from the wheat field, including the making of all the wonderful machinery for the harvest, the granaries, the flour mills, the little bake shops, and the big ones where millions of loaves are turned out daily by machinery, it would be found that there is material enough on this one subject to fill a volume of uncommon interest. In this connection it may be of interest to note that France still handles her wheat largely in bags by hand and that she has never adopted the modern system of great grain elevators, flour mills, and breakfast food plants, which have all been developed to such a high state of perfection in this



THE PETERBORO PLANT OF THE QUAKER OATS COMPANY.
Leonard Construction Company, Builders.

[A grain elevator, flour mill and breakfast food plant combined. The grain is stored in the vertical tubes of concrete, as well as in the interstices between the tubes. All grain is mechanically handled from the cars into the elevators and then through the processes of manufacturing to the completed products. Plants of this kind would be a great thing for France, which still handles most of its grain in bags by hand.]

country. The American system in these industries saves an enormous amount of manual labor over the old methods, and also provides safe, fireproof storage for vast amounts of foodstuffs. This country might do a further material service for France, after the war, by calling attention to these approved methods of food production and storage, and offering the results of our experience in the design and construction of such plants.

The meat industries have undergone a decided transformation since the days of the small slaughter houses. The main part of the meat business has gradually been taken over by a few corporations which, with a few exceptions, have grown to be the largest concerns in the country. At first their buildings were of wood, which were great fire hazards and not very well suited to their business; but since the adoption of concrete for building construction, they have found in it a material that is sanitary and well adapted for their purposes.

Next to the food industries, the most important industry is the one supplying clothing and its materials. Here again a most marked development has taken place. The textile manufacturing plants, where the cotton and woolen cloths are produced, have very generally been built after one type—long mill constructed buildings—such as those so common in the New England district, that are sixty feet or more in width and four stories or more in height. The manufacture of clothing involves not only the large clothing manufacturing plants, but also those working places, called sweat shops, that have caused so much trouble. A large part of the work of sewing clothes is done at home in the private houses and tenements of people who make their living by doing piecework of this kind.

In recent years a great deal has been

done to improve the workshops of the clothing industry, and an illustration is shown of a modern clothing factory, built away from the center of the city, in the form of a one-story, saw-tooth factory, where the skylights give excellent light and ventilation to all parts of the building. In strong contrast to the ideal conditions for the work and for the healthy condition of the workmen and women, as found in this plant, are those existing in the tall loft buildings of large cities, where thousands of people, engaged in the manufacture of clothing, are often crowded together, usually above the fifth story, and sometimes up to the twentieth floor. Such workshops are a handicap to the business, because they are not built for the purpose, and lack, as a rule, not only the building features that are essential for the best production, but they often contain impediments and obstacles in the way of attaining a hundred per cent. quality or quantity of production.

The industry coming naturally in importance after those producing food and clothing is the one that contributes the things necessary for shelter. This would include the industry of building and all those allied industries producing the manufactured parts of buildings. Woodworking plants, saw mills, and planing mills are usually housed in buildings that are of themselves very combustible and inferior as a class to the buildings of most of the other industries. While they make the best things for other buildings, they resemble the shoemaker in being down at the heel as far as their own buildings are concerned.

In this way, one could go all through the list of the needs, comforts, luxuries, customs and activities of life and find that special industries have been created to supply each one. The types of industrial plants therefore are as numerous and varied as are the needs and demands of human life.

II. SITES FOR INDUSTRIAL PLANTS.

The essentials for securing the best location for each industrial plant will of course vary according to the nature of the industry; but the following six subjects will demand careful study by most of the industries in selecting a site:

1. Center of the market for the sale of the product.
2. Accessibility of materials consumed.
3. Transportation.
4. Possibility of securing the most suitable employes.
5. Favorable building conditions and power requirements.
6. Room for expansion of the plant; proper foreground and landscape effects; space for out-door recreation; and, if not otherwise provided, space for housing employes in a modern industrial village.

1. Center of the Market For the Sale of the Product.

The selection of a site for an industrial plant, which is as near as possible to the center of the market consuming the goods of that plant, has a great advantage over others not so fortunately situated in being able to reach its customers in the shortest time and at the least cost of shipment. This is particularly true of producers turning out goods of material size and weight; customers in such instances are strongly influenced to buy the big or heavy things as near home as possible, as long transportation hauls increase the possibility of shipments going astray, of causing damage to goods en route, and they prevent the possibility of filling hurry-up orders promptly in response to urgency calls of customers. Traveling salesmen and managers of branch houses can also keep in touch more effectively with the head of the producing plant if it be located in the center of the market.

2. Accessibility of Materials Consumed.

The second subject, of the accessibility of materials to the industrial plant, is one of the most important ones; and yet, in spite of its being so apparent, many large industries are located far from their sources of supplies. The great meat industries of Chicago are far from the grazing fields of the western prairies, where much of the cattle is raised, not-



GENERAL VIEW—PEACOCK REAL ESTATE TRUST BUILDING, CHICAGO.
E. Norman Brydges, Architect.



DETAIL OF ENTRANCE—PEACOCK REAL ESTATE, TRUST BUILDING, CHICAGO.
E. Norman Brydges, Architect.

withstanding the disadvantages of excessive cost and hazard of hauling cattle such long distances. In recent years, however, additional plants at Kansas City, Omaha, and other western cities, have been established to do away with some of these long hauls. The same policy has been pursued by the steel industries in breaking away from Pittsburgh and locating some of the new plants at Gary, Duluth and Birmingham, and thereby getting closer to the mines from which they get their raw material. Many causes, sometimes beyond the control of the manufacturer, have brought about the necessity of long hauls of materials; but the subject is so important that mention of it should be made as one of the essentials for highest development.

3. Transportation of Industrial Plants.

The means of receiving and transporting materials and goods to and from an industrial plant have often been a deciding factor in determining the location. It has been always considered necessary to have at least two railroad lines for shipment in order to obtain reasonable freight rates. Perhaps Government control may remedy that while it has control of the railroads.

Any industry that has both water and rail transportation direct from its plant to important points is particularly fortunate. Rates of water transportation are usually much lower than by rail; but away from the sea coast or Great Lakes, water routes, including the attractive old canals, have been only slightly developed in this country as compared with those in Europe.

The kind of transportation, the freight rates, switching charges, the number of switches made per day, if done by the railroad, the question of less than carload lot shipments, and the service of express companies are all important determining features of every site.

The manner in which switches are brought into a plant is an important and sometimes a difficult problem, particularly when the lack of space will not permit curves in the switches of a radius of 360 feet or more. The radii of existing switch tracks at different plants vary all the way from 150 feet to over 360 feet. Originally the wheel base of switch engines was small enough to go around small curves properly; but since then it has been increased, so that now there is no end of trouble and delay caused by the derailment of modern switch engines on switch tracks of small curvature.

The choice of direction for bringing switch tracks into a plant is usually to run them from the rear to the front. If there are a number of tracks to be used, the best arrangement to try for is to place them in two groups, arranged so that the tracks for out-going freight are on one side and the incoming freight on the other, thus leaving the center space all free of tracks for the occupation of building and for the uninterrupted travel of material and product through the various processes of manufacture. If the nature of the manufacture is of a certain kind, the least handling of things and the shortest travel for them may be secured by placing incoming freight tracks all the way down the sides, and the outgoing tracks partly up the center from the rear. It is seldom ever the best plan to scatter tracks throughout the plant, just as it is a bad plan to scatter incoming railroads all over a city instead of bringing them in, centered in one or two points.

When there are two or more tracks in any group of switches next to a loading or an unloading space, it is always desirable, if space will permit, to separate the tracks far enough apart so that there is room to build what has sometimes been called an island platform of five or more feet in width, between the lines of cars. These island platforms will permit of loading or unloading directly through the different lines of cars without the necessity of having to spot the freight cars. Spotting the cars is that tedious and time-consuming process of uncoupling each freight car from every other and placing it with that nice adjustment so that the door of each car in each line of tracks is exactly opposite that of every other car, in order to be able to go through the doors from



FORD ADMINISTRATION BUILDING, DETROIT, MICH.
Albert Kahn, Architect.

one line of tracks to the other. On account of the many different lengths of freight cars this process of spotting the cars is the cause of enormous waste of time and needless expense at many freight terminals.

In the case of a small plant, where there is only one or a few switch tracks, a site for the building may be best chosen where the tracks can be placed to run along the rear of the plant. If the problem is one where one or more tracks must make a curve off from the main line and run into any building, then care should be taken to see that there is space enough so that the tracks will not have to curve after they enter the building, as curved switch tracks inside of a building always mean material extra cost in framing the structural parts of the building over such tracks. If switch tracks inside of a building, several stories high, are to be placed along one side of the building, it is seldom the best arrangement to place these tracks directly against an outside wall, where they are often placed, because this gives access to the cars from only one side; while if they are set over from the outside wall, even one column space, they will then be accessible from two sides, and it may often be possible in such a case to make a receiving platform of this space where materials for manufacture may be received and where also elevators or conveyors may be placed to elevate these materials directly to their proper floors, without in any way interfering with the space on the opposite side of the tracks, which may all be devoted to an uninterrupted shipping room.

The standard height of floors or platforms above the rails of switch tracks is from 3 feet 9 inches to 4 feet. Notwithstanding this well-fixed standard, some bright designer of refrigerator cars started the custom of making the hinged doors of such cars so low at the bottom that they cannot be swung open when the cars are run alongside of a standard platform. Platforms must be only about 3 feet 4 inches above the rails to allow such doors to open. This defect in refrigerator cars has now been corrected in some of the new cars by the substitution of doors



FORD SERVICE BUILDING, OMAHA, NEB.
Albert Kahn, Architect.

that will open on standard platforms; but there are a lot of cars of the other type on the different roads, which have often to be provided for, in existing platforms, by building slots with removable covers, and by lowering some sections of the standard platforms, or by opening the doors of such refrigerator cars and fastening them securely before shifting them in alongside of the platforms.

When the tracks of railroads are elevated, as they now are in many cities, this fact need not preclude the selection of such a site for a plant unless there is some special requirement for surface tracks. Plants with ordinary requirements can usually plan very well to have the shipping and receiving facilities in the second story. There are some large and important plants operating under this plan. In city localities the elevation of the railroad tracks often makes possible a most desirable space below for trucks and teaming, also for the gravity unloading of coal. This first story space can also be often used to advantage for offices, sales space or the storage of things not actively moving in the operation of the plant.

Some building sites offer the advantages of tunnel freight delivery, such as the Illinois Tunnel Company's system, under the streets of Chicago. This system connects with the principal freight terminals of the city and has branch tunnels extending into many of the commercial and industrial buildings from the street tunnels nearby. From the end of each branch tunnel under the building an elevator is provided that will elevate the cars to any story of the building desired. Switch tracks are usually installed on some floor devoted to shipping, where a miniature freight yard can be laid out, as the cars are small and run on narrow gauge tracks. In this way a vast amount of team and truck traffic is removed from the congested streets of the city.

Cities having navigable rivers and waterways offer a good means of short haul transportation through use of lighters. These can be made in quite large units and utilized effectively for delivery directly to railway terminals, ship docks



GOODRICH TIRE SERVICE BUILDING, DETROIT, MICH.
Albert Kahn, Architect.

and receiving points. The relative level of waterway docks and adjoining streets should be such that, with a reasonable amount of filling and construction work, delivery can be made from the ground floor level of the plant to both boats and motor trucks, or if the street is considerably above the waterway, as is usually the case, boat delivery can be arranged on a basement level and truck delivery from the floor above. If railroad service is also to be provided, then additional attention should be given in selecting the site to the relative levels of these three means of transportation in relation to the building construction and design.

The final matter for consideration in selecting a site is the local transportation to and from the plant, if it is to be located outside of a city. The employes as a rule prefer to live near enough to the plant so that they can walk to and from their work. If it is not intended that they shall, then adequate means of travel by trolley or railroad should be assured for them as well as for all other people who may need to visit the plant, before being committed to the selection of any site. Such local transportation can often be made one of the conditions contigent upon the selection of a site, if it is provided for in time.

4. Possibility of Securing the Most Suitable Employes.

The securing of employes is, for some industries, the chief deciding factor in selecting a site. These are obliged to seek the locality where the people live whom they wish to employ. Cigar and tobacco factories are usually affected in this way when selecting a site. Paper box factories and such industries, which employ many boys, girls and women, often seek the location of some large industrial center with the idea of securing for their work the sons, daughters and wives of the workmen employed in the larger works.

The most important plants of each industry usually group themselves together in one locality, so that they are assured of the kind of employes they require. Some industries, particularly those with

high-class skilled labor, can induce their men to follow them to almost any location where the other inducements are the strongest.

Mail order houses have a big problem in securing adequate help, and one of the chief requirements of such a plant is its accessibility to its employes. One large firm, before it changed its location to larger quarters, took a map of its city and indicated on it, by marking six thousand stars, the locations of the homes of its own people. With this as a basis it made a six months' study of the situation before selecting the new site.

5. Favorable Building Conditions and Power Requirements.

There is usually no difficulty now in erecting any kind of a building where there are transportation facilities. Unless it is unusually inaccessible to material or labor markets, its cost would not be essentially effected. If heavy timbers are not available at reasonable prices for mill construction, it is probable that reinforced concrete can be built at less cost. In warm climates some regard should be given in the construction to insulation against excessive heat and ventilation from the outside; while in cold climates inside mechanical ventilation, heating, disposal of snow and roof drainage should receive extra attention. Climatic conditions would also properly influence the plan and design of the plant in other ways.

One very important consideration of every site is whether or not proper sewage disposal is available and whether the surface drainage is such as not to cause various troubles from floods, in the way of submerged basements, pits, damp walls, mildewed and rusted floor constructions. Pure drinking water is, of course, one of the first essentials.

Localities over which the prevailing wind carries excessive smoke and injurious gases should always be avoided, as well as places where a stream or river is polluted by the refuse of some other plant.

In fact, no site can be ideal unless it is clean, wholesome and attractive, at least to start with.

If a plant seeks water power, that requirement would narrow the selection of a site down to the streams which have a proper fall to produce the power. If it is not intended that the plant generate its own power, then the selection of a site is again restricted to localities equipped to supply that, as well as water and gas, if required.

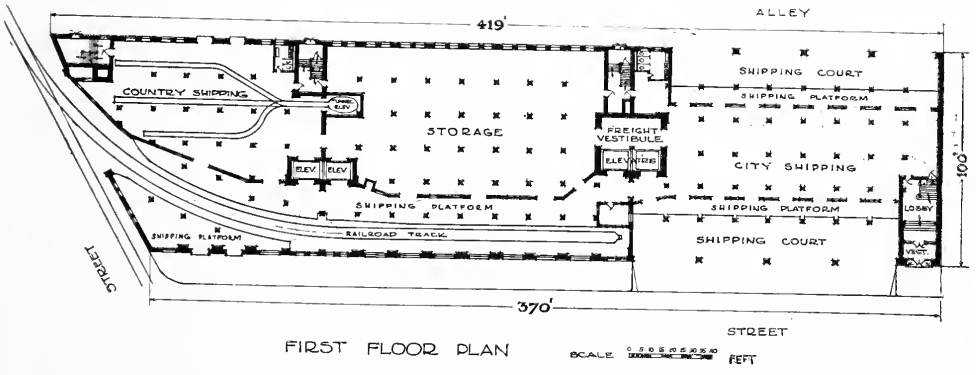
6. Room for Expansion, Space for a Foreground, Recreation, Housing, etc.

There is probably no one provision that has to do with the selecting of a site for a plant that is of more importance than room for expansion. If an industrial firm goes through all the trouble and expense of building a new plant, moving and readjusting itself to the new conditions, and then finds, after it has started on a new career of expanding business and successful operation, that it has failed to provide wisely for enlarging its buildings and operating space, it will finally be compelled either to go through the whole ordeal of moving and building another plant all over again, or allow its business to be gradually choked to death by trying to grow in quarters that are too small and inadequate to accommodate properly a growing and an expanding business. Many a concern has found itself in just such a predicament after rebuilding, because proper provision was not made in the first place for expansion of the business.

Future growth of a plant deserves just as much study as present requirements. A new plant should never be built without a well-studied, comprehensive plan for at least a reasonable amount of future growth. Such a plan should provide not only space for future buildings and handling and storage yards or spaces, but it should, in the construction of such buildings as may need to be enlarged, also provide ample foundations and supports for extending them up higher or building on to them laterally. No building site, therefore, should be accepted which will not permit of future growth or expansion.

In addition to the necessity of secur-

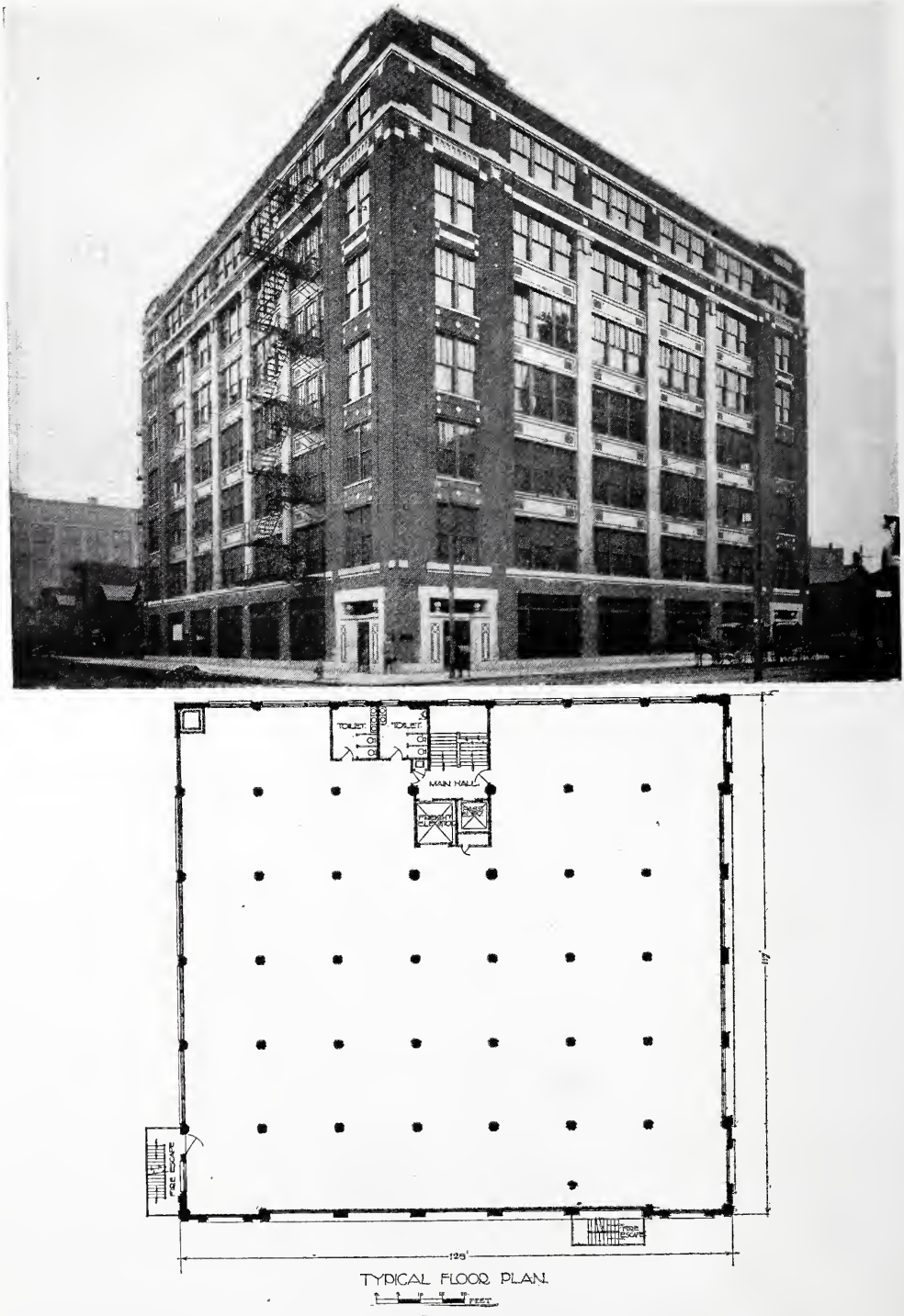




EXTERIOR VIEW AND FIRST FLOOR PLAN—BUILDING OF JOHN SEXTON & CO., CHICAGO.
Alfred S. Alschuler, Architect.

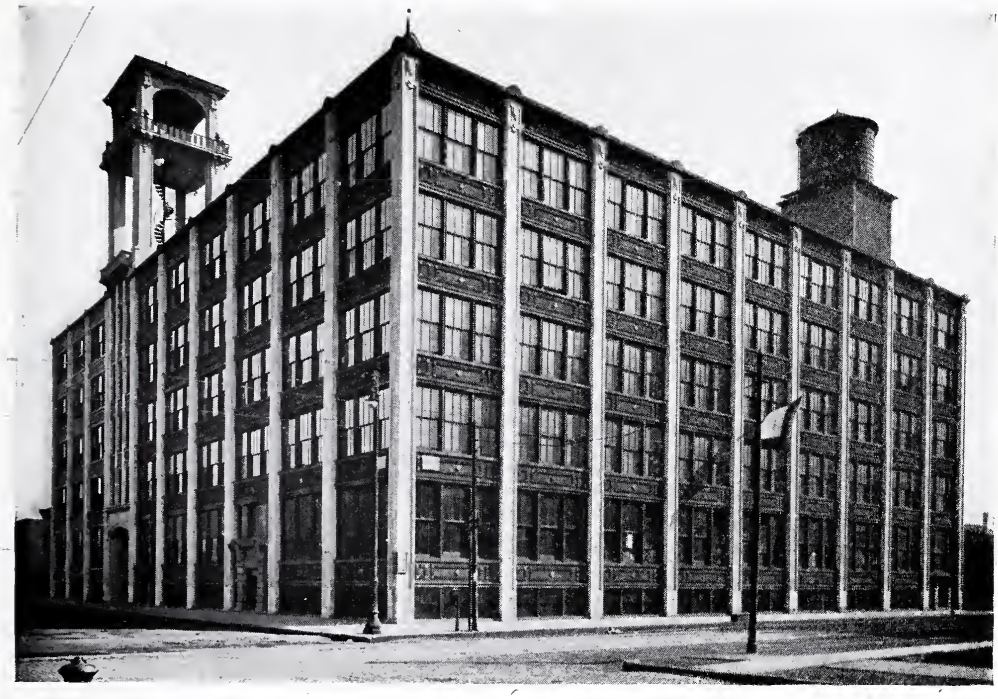
ing ample space on the site of an industrial plant, for expansion to meet purely manufacturing needs, is the desirability also of providing space that will prevent crowding of the plant on the site and thereby eliminating any opportunity of creating a foreground for the buildings, recreation or playgrounds, and room for special buildings and requirements that in recent times have proven to be most valuable accessories to decrease the turnover of labor and increase the efficiency of the plant.

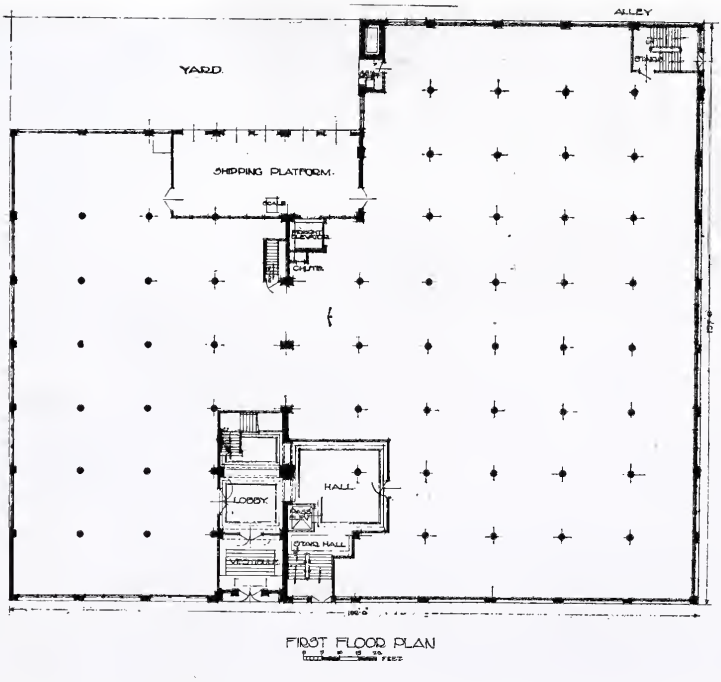
One of the needs of large plants that has required more serious attention during the war than almost any other has been the housing of employes. It was thought in England, at first, that on ac-



EXTERIOR VIEW AND TYPICAL FLOOR PLAN—BUILDING FOR ALBERT H. LOEB, CHICAGO

Alfred S. Alschuler, Architect.





EXTERIOR VIEW AND FIRST FLOOR PLAN—BUILDING OF A. STEIN & CO., CHICAGO.
Alfred S. Alschuler, Architect.



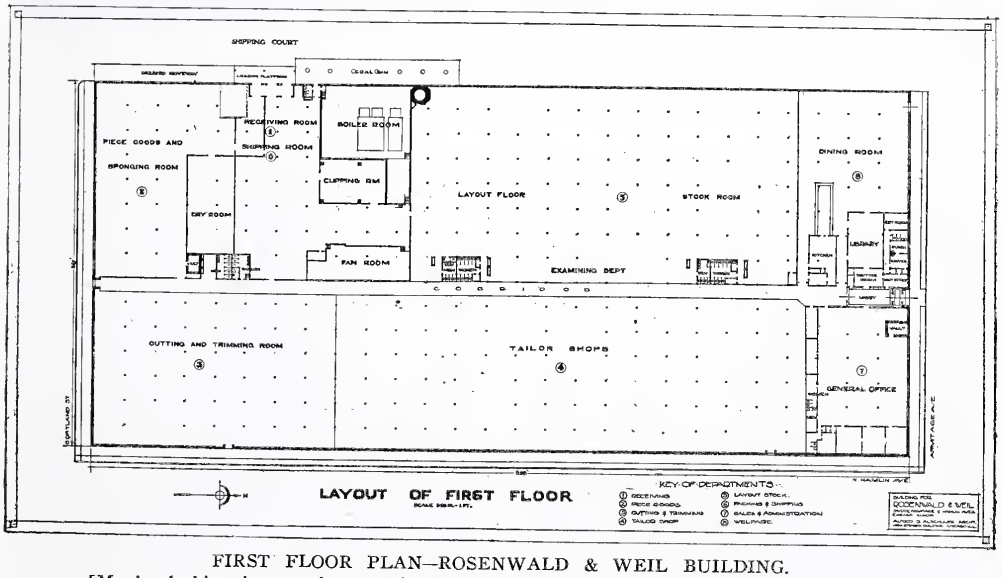
ROSENWALD & WEIL BUILDING, CHICAGO.
Alfred S. Alschuler, Architect.



INTERIOR VIEW—ROSENWALD & WEIL BUILDING, CHICAGO.
Alfred S. Alschuler, Architect.



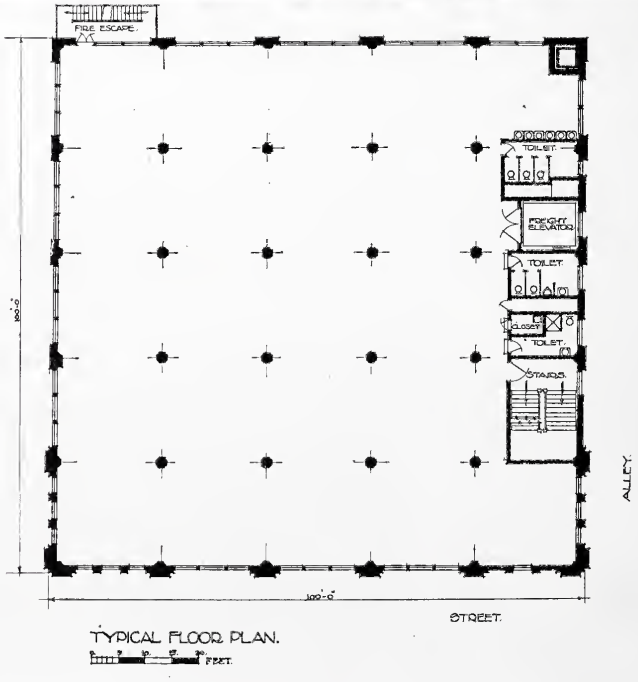
ENTRANCE DETAIL—ROSENWALD & WEIL BUILDING, CHICAGO.
Alfred S. Alschuler, Architect.



FIRST FLOOR PLAN—ROSENWALD & WEIL BUILDING.

[Men's clothing is manufactured in this plant. All incoming material used in manufacture is brought to the receiving room. From here it is routed through the various processes of manufacture in the order of the numbers from one to six marked on the plan. All operating departments have direct overhead light from saw-tooth skylights, and heating and ventilation from a fan system. As an insulation against summer heat the roof has a layer of one-inch insulating quilt in its construction, which results in saving enough coal in winter to pay for its cost in four years. Pivoted vertical sash in the saw-tooth skylights provide summer ventilation. Tests have shown inside temperature ten degrees lower than that outside in the hottest weather. Provisions are made for employes' welfare work, as represented by the dining-room, kitchen, library and hospital.]





TYPICAL FLOOR PLAN.

C. A. BREWER BUILDING, CHICAGO.
Alfred S. Alschuler, Architect.

count of the temporary character of munition manufacture and the urgency of speed in establishing new munition plants, employes would be willing to get along with living quarters which merely supplied the necessities of shelter. This proved to be untrue and resulted in an investigation of the whole situation of housing employes, which brought to light and established many facts on this subject that formerly were unknown or disputed. As a result of this a new reform movement has already firmly established itself in this country, and the Government and many private concerns are now actively engaged in building new model villages for workmen.

If employes are therefore to be housed in connection with the new industrial plant, very careful selection of such ground should be made as would be suitable for an industrial village of the new and model type.

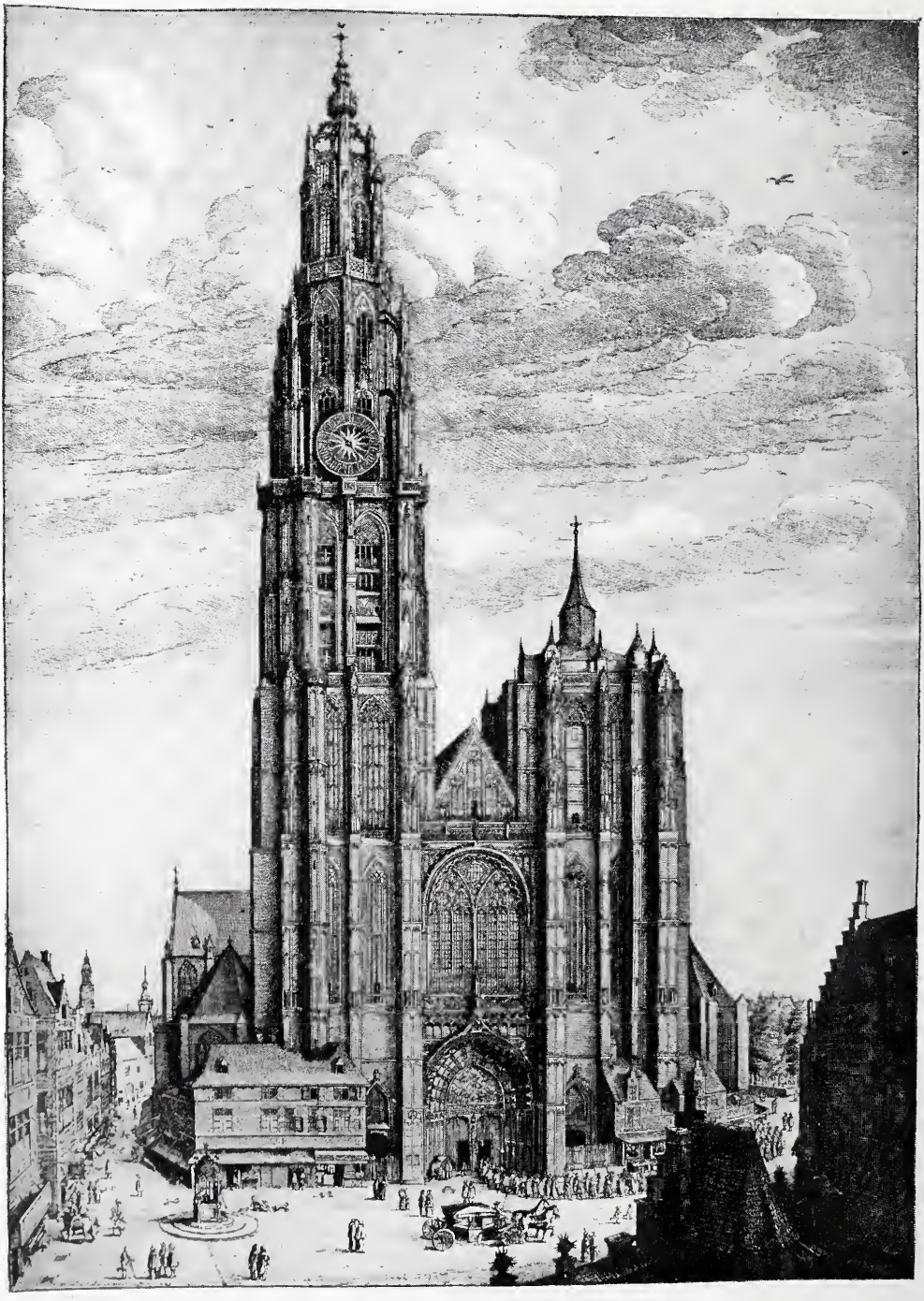
Few owners appreciate at first, until their attention is called to it, how desirable a foreground will be at the front of their plant. No building can look its best or serve its purpose as well if built right up to the sidewalk or streets, as it would be if set back from the property line. In crowded city locations this may be impracticable; and yet even in such locations it is often possible to set back some portion of the front façade, perhaps that near the main entrance, without infringing on the maximum usable area of the site. In less crowded districts a setback of a few feet, say ten feet, may give opportunity of treating this space properly, of improving the appearance of the whole plant greatly, and of adding materially to the natural lighting efficiency of the glass area of such a front.

Where the selection of a site permits the devoting a generous amount of space to the foreground, then a real opportunity occurs for doing something, usually without material expense, that will change the whole character of the plant. There is no industrial plant that does not benefit in some way from the proper and attractive treatment of the ground around it. With some it may have a decided advertising value, while with others this may be of no advantage; but with all of them, an attractive foreground and corresponding cleanliness and good order throughout the plant, that are naturally a part of the program of attractiveness, have a material influence—mentally, morally and financially—in the carrying on of the work of that plant.

A plant which is obliged to locate in the crowded district of a city has always the problem of providing against the diminution of its light and ventilation in the additional building of its own or that of its neighbors. Light courts that are sufficient for good results at first may be made most inadequate by future vertical additions. Streets at first which afford good light may also be greatly impaired in this way in their lighting efficiency afterwards. An expedient to adopt to overcome this defect is to arrange, in the design of the construction, for setting back the walls on a street or light court, so that the areas can be enlarged as the building extends upward.

The only safe way to provide adequately against future encroachment on the space for light and ventilation, in a crowded district, is not to attempt to occupy all the space with a building which the building ordinances permit, when such occupancy may be greatly impaired in its efficiency by building operations on adjoining property over which the owner has no control. Often half the space needed for a light court on a property line is left by one owner, with the expectation that his neighbor, when he builds, will leave a corresponding one; but unless there is a contract to that effect, with provision for the maximum height of construction, which is very difficult to get, such a light court may become utterly useless.

Compliance with most building laws do not always insure good light and ventilation, and it is safe, therefore, to plan to use only such area on any building site as is reasonably safe from being spoiled by future building operations.



Illustrations by courtesy of Prints Division,
New York Public Library.

ANTWERP CATHEDRAL. ETCHING
BY WENZEL HOLLAR.

Architectural Etching

By Frank Weitenkampf

NO matter what subject the artist attacks, or what medium serves him in his work, it is inevitably the artist back of the subject and the medium who counts.

Even a layman, not unintelligently interested in matters of art, might conceivably consider such a specialty as architectural etching a matter to be simply stated in terms of a definitely circumscribed method. Yet that it cannot be, for reasons of personality above indicated. Architectural etching, similarly to other specialties in the reproductive graphic arts, well illustrates the wide diversity and rich resources of that only apparently limited field of art activities grouped under the name "prints."

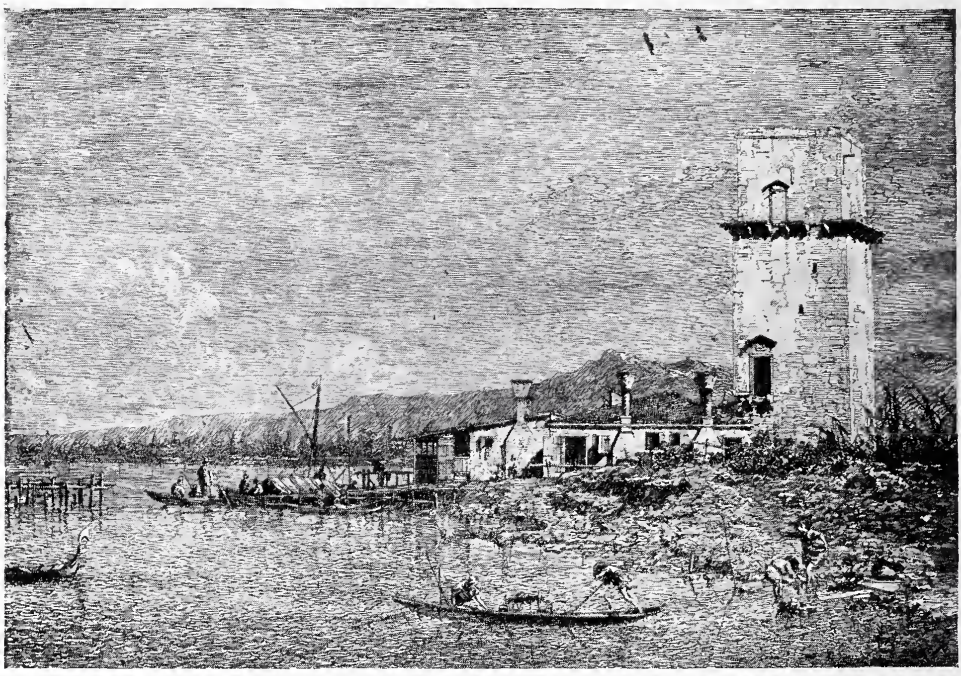
The classifying—pedantic, if you will—mind of a librarian or a custodian of prints may at once busily sort architectural etchings into groups. For instance, the more or less "straight architectural" plates of A. H. Haig or Hedley Fitton, emphasizing structural composition, effect of façade, decorative detail. Then there are artists, such as Frank Brangwyn, to whom the building becomes an affair of masses of light and shadow, seized and accented with an eye to decorative effect—things to be said also, with allowance for quite different personal view and expression, of Marius Bauer. To others, Eugène Béjot, for instance, buildings have interest in groups, as expressions of the character of a locality, and so we get street scenes. Another, again, may see the building as part of its surroundings, a viewpoint expressed by architects in the surely growing consideration of the adaptation of construction, particularly rural, to the building site and its environment. And there are etchers of city life—such as the Frenchman, Félix Buhot, and our own L. G. Hornby—to whom buildings and humanity are inseparable, one the setting for the other, the latter the *staffage* for the former, the whole a complete expression of the city's life.

Strong contrasts are easily found. Take the large plates by Haig, depicting cathedrals and other large buildings in straightforward transcript. Compare them with the very much smaller Venetian subjects by Whistler. Light, airy, almost imponderable and yet perfectly tactile, his palaces rise beside the canals, gossamer-like, the perfect expression of a joyous delight in conveying an individual and beautiful impression of the world. And there we are again, face to face with that fact of the ultimate subclassification of all art into expressions of individuality.

Whistler's Venetian work influenced various artists directly or indirectly—Pennell, Frank Duveneck, Otto H. Bacher, D. S. MacLaughlan, Cadwellader Washburn. He himself went through a development which we can trace back to his early London scenes, quite precise and firm, though not hard. Even these, with primary emphasis on the beauty of the etched line as a means of expression, are apart from the class of work signed by Haig, Fitton, Rochebrune or the quite dry and unemotional Queyroy.

For temperament of a fiery sort, with an admixture of delight such as Cyrano de Bergerac's, in "the gesture," one goes to Piranesi. What James Huneker once called "hunting the black butterflies of analogy" usually amounts to the application of procrustean beds, as violent as this present mixture of metaphors. Therefore the name "the Rembrandt of architecture," bestowed on Piranesi, is repeated here with reservations, and solely in order to emphasize the sombre shadows with which Piranesi enveloped his views of ancient Roman buildings. They stand out in imposing reality, not with the appearance of meticulously care-

ful restorations. In shadows, under archways, in various nooks, there pose figures in strained attitudes. They throw side lights on an imagination which rises to its height of feverish activity in the *Carceri d'Invenzione,* that series of impossible prisons rising to impossible altitudes of super-imposed floors and gal-

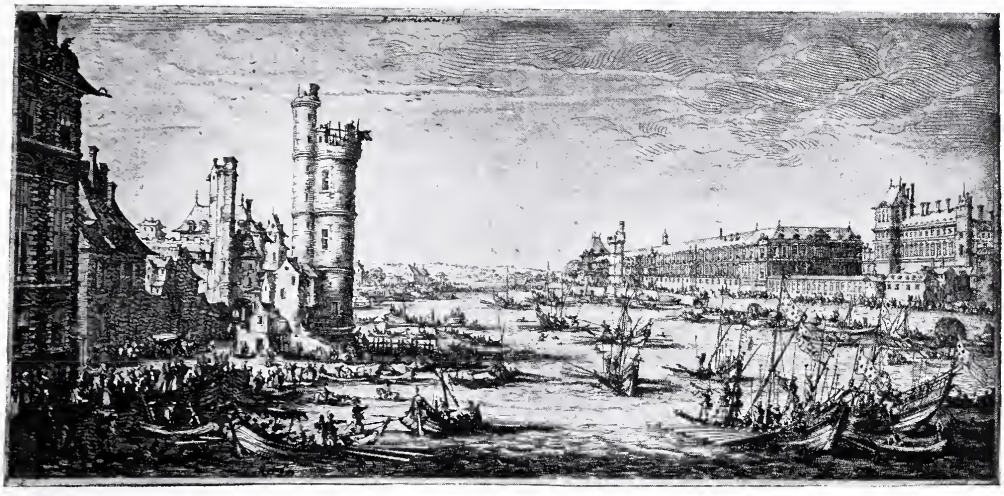


LA TORRE DI MALGHERA.
Etching by Antonio Canal (Canaletto).

leries, reached by a vertigo-crowned succession of stairs and ladders that stretch up and, who knows how far, beyond the confines of the picture. Yet the artist who evolved this architectural opium dream did also series of plates which have been a source of inspiration to architects. Arthur Samuel, who says that "architectural etching has culminated with him," has told us of the great influence his designs had on Robert Adam and other decorators in England, and that "American architects have drawn liberally on his entire output."

For a certain grandiloquent vigor of imagination, force and sweep of technique, depth of color and prolific devotion to the subject of his choice, Piranesi holds a place quite by himself. To pass from him to artists working with a more delicate touch, implies readjustment of eye and mind. His large plates, with a big emphatic line which does not call for too close examination, decorative in effect, are adapted to framing and the wall, rather than to the portfolio. More or less in this class of wall decorations are also the larger plates of men such as Haig, Fitton, Brangwyn—it being understood again that this grouping has no farther significance as regards style, viewpoint or any other quality implied in the make-up of personality.

Most etchings, even of architectural subjects, have an element of greater intimacy in enjoyment, an element akin, let us say, to that offered by the string-quartette concert. It is an element that calls for study in small exhibition galleries or in the print room with its portfolios. It is the sort of thing exemplified in absolutely differing aspect by those two masters of the art, Rembrandt and Whistler. Rembrandt, however, approached archi-



VIEW OF THE LOUVRE (1629).
Etching by Jacques Callot.

tecture only in a few of his religious subjects. He pictured mainly farm cottages, as part of the homeland which he saw and reproduced with sympathetic appreciation.

The interest in locality is responsible for a large number of the architectural etchings which we know.

Whistler had a precursor in Venice in the early Eighteenth Century, a precursor in local interest, I mean. Without our expatriated countryman's dainty preciosity and unfailing distinction in the choice of the right line, Canaletto had a quiet dignity of firm, light precision. His contemporary, Samuel Scott, depicted London in a somewhat similar manner and spirit. And to the British capital there had drifted, in the preceding century, under the protection of Lord Arundel, a Bohemian artist, Wenzel Hollar. A pupil of Matthew Merian, surpassing his master in freedom of touch, he varied his large and carefully executed plates of exteriors and interiors of the cathedrals of Strasbourg and Antwerp, and of other buildings, with little views in London and elsewhere, done with the charm of honest workmanship and sympathetic application. In recent years a number of Britain's etchers have recorded bits of her achitecture interesting for beauty, or historical associations, or age. Such artists as Albany R. Howarth, Affleck, Dodd, Hewins, O. Hall, C. J. Watson, William Monk, Constance M. Pott, with Cameron and Bone as outstanding names. D. Y. Cameron's "richness of tone in the treatment of architecture," says A. M. Hind, "is the achievement of great power and individuality." His "Five Sisters of York," that apotheosis of stained glass, is a particularly impresive and beautiful example of his work. As to Muirhead Bone, "From the first," wrote Wedmore, "it was humble London that moved his thought and his hand. He understood at once the aspect of the commonplace street, . . . he saw that in it which was peculiar and personal: its little touch of dignity or interesting homeliness."

Joseph Pennell, long a resident of London, and recently returned to our land of his birth, has been an artist-recorder of his travels in various countries. His quick resourcefulness and a directness, born of what one has called "a wise reticence in line," have been admirably applied to the delineation of city views in London, New York and elsewhere. There is in his style a crispness which was particularly emphasized, in the case of his lithographs, by Whistler.

Buildings, often as part of a given locality, figure in the works of a number of modern etchers. Picturequeness, local and historical associations, are governing factors in the choice and delineation even

of individual structures, and more often it is the group that is shown, the square or street. The spell of urban life is strong on us to-day. Architectural etching is assiduously practiced. Inspiration is perhaps not so frequent as dexterity; love of place not always so strong as recognition of a taking subject. But the best work will endure.

Each country that has etchers has its etched glorification of its cities' beauties.

Our American cities have their artistic votaries. Joseph Pennell naturally comes to mind, picturing the quaintness of Philadelphia at the beginning of his career, and later on New Orleans, Chicago, San Francisco, New York, Pittsburgh. Charles Henry White, a few years ago, was issuing in *Harper's Magazine* a series of sprightly articles on American cities, illustrated with reproductions of his etchings. Text and illustrations mirrored his interest, both artistic and purely human, in the city's picture as a whole, the character which its buildings impress on its streets, the little comedies in the life of its inhabitants, and the sun and air playing on and around it all.

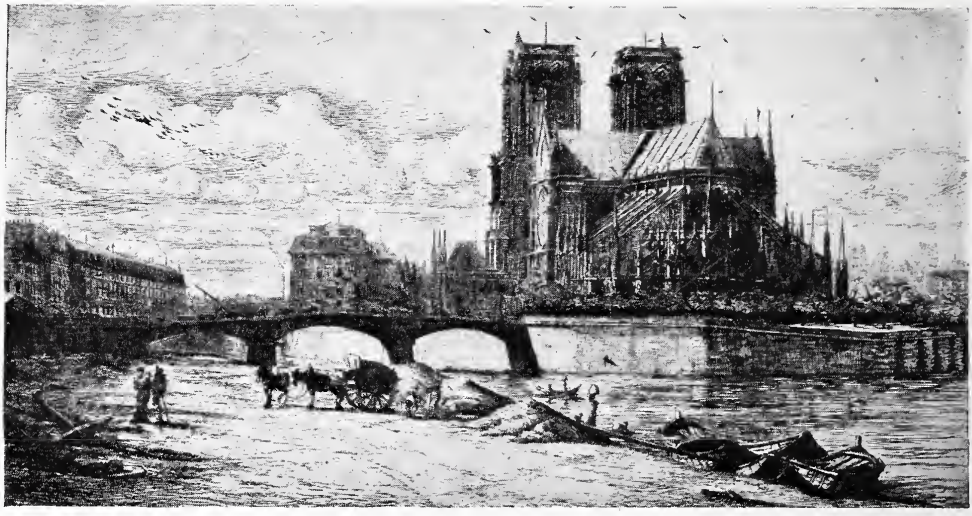
Some artists have been identified more or less with certain individual cities. Thus, New York City appears, under as many different aspects, in plates by B. J. Olssen-Nordfeldt, Childe Hassam, A. T. Millar, J. André Smith, Henry Winslow, Henry Deville, J. C. Vondrous, Earl Horter, W. J. Quinlan, and especially C. F. W. Mielatz. The last-named is indeed New York's etcher, Father Knickerbocker's own. With a sure eye for the picturesque, the quaint and the attractive, seeing things from the proper point of view and reproducing what he sees in perfectly sane and straightforward statement and with an ardent experimenter's sure knowledge of the processes of etching, Mielatz has for years cultivated the gentle art of showing New Yorkers the beauties and attractions, at times either not obvious or out of the beaten track of travel, of their "little old town." Rudolph Ruzicka must be mentioned, too, although he works, not on copper, but on the wood block. His little cut, about 2x3 inches, of the New York Public Library, gives, in its few, open lines, an effect of size and solidity that neither a larger scale nor added work could make more impressively read and adequate. Cincinnati has its George E. Burr, Chicago its Nordfeldt.

Not a few artists have sought inspiration abroad. Cadwallader Washburn not only in Mexico, but as far afield as Japan and Siam. Some have been attracted by Italy: D. S. MacLaughlan, E. D. Roth, H. A. Webster. But particularly Paris, mother of artists and their model, has drawn them: George C. Aid, F. M. Armington, Pennell, H. A. Webster, T. E. Tallmadge, John Marin, Lester G. Hornby, Nordfeldt, C. K. Gleeson, O. J. Schneider, Vaughan Trowbridge. These have joined the little army of French and other artists who, since the days of Callot, have sung the praises of the city by the Seine. Callot's two views, looking up and down the river, showing the old Tour de Nesle and the long stretch of the Louvre, are classic. In the Eighteenth Century came the many engravings of palaces and gardens of royalty and the nobility, elevations, plans and scenes. These were done with the formality of the burin (graver) instead of with the greater freedom of the etching needle, but they are mentioned here on account of their interest to the architect and the landscape gardener. The copper plates of these are housed in the "Calcographie du Louvre," Paris, where they are still printed from, impressions selling at low figures.

And then, what an array of etchers has glorified Paris and other French cities during the Nineteenth Century! The exhibition illustrating "The War Zone in Graphic Art," now on view in the main building (Fifth Avenue and Forty-second Street) of the New York Public Library, exemplifies this to a considerable extent. The cathedral of Rheims was etched by Haig, Henri Toussaint, G. T. Plowman and Vincent Randolph; that of Amiens by Haig, Camille Fonce, Auguste Lepère and lithographed by J. D. Harding, and that of Strasbourg by Hollar, Haig and Octave Rochebrune. Here, too, are castles and other buildings by Rochebrune



RUE DU GROS HARLOGE, ROUEN.
LITHOGRAPH BY R. P. BONINGTON.



THE APSE OF NOTRE DAME, PARIS.
Etching by C. Meryon.

(Pierrefonds), Lalanne (Thaumont) and others, and Belgian cities by Brangwyn and Haig. And leaving the scenes of actual fighting, we may find in the portfolios of our print rooms Paris scenes by Meryon, Brunet-Debaines, Lalanne, Lucien Gautier, Lepère, the industrious A. P. Martial, Leopold Flameng, the sprightly Felix Buhot, Eugène Béjot, to whom Paris is ever a charming, sunny place, Emile Rousseau and Edgar Chahine. Reproductions of etchings by these and other modern artists, as also of the work of Israel Silvestre (Seventeenth Century) and Pernot (Sixteenth Century), will be found in "Paris Past and Present," a volume edited by Charles Holme and published by the *Studio* in 1915.

In the first half of the Nineteenth Century, when lithography was assiduously cultivated by French artists, Baron Taylor enlisted the services of a number of the latter in the production of a voluminous and sumptuous work on the scenery and monuments of France (*Voyages Pittoresques en France*). This is noted, although etchings only are supposed to be dealt with here, in order to call attention particularly to two drawings by R. P. Bonington, the English artist. His "Rue du Gros Horloge, Rouen," and "Tour du Gros Horloge" are of an interest not only local, but technical and architectural. Especially the first named, in which the block of buildings is indicated with a sureness of touch that, at a little distance, indicates a rich detail of architectural decoration, which on closer view dissolves into the indefiniteness of atmospheric effect.

Of all those who have pictured Paris one stands forth by the strength of a personality neither brilliant nor outwardly successful during his life-time. A brooding spirit, eventually losing itself in madness, was that of Charles Meryon. To him the buildings of Paris spoke of the past, of those who had lived and suffered and died there. "Meryon," said Burty, "preserves the characteristic detail of the architecture. . . . Without modifying the monument he causes it to express its hidden meaning, and gives it a broader significance by associating it with his own thought." His posthumous fame is based mainly on about a dozen-and-a-half beautiful plates in which he gave a weird, powerful embodiment of the spirit of a Paris which was disappearing under the leveling activities of Baron Haussmann. A fine illustration of his point of view and method may be found in his masterly etching of the

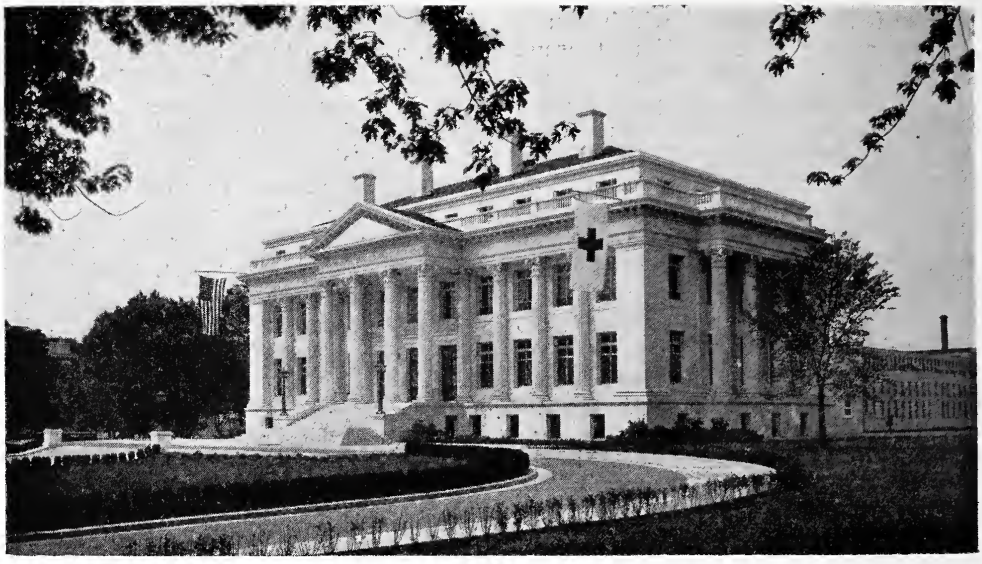
"Apse of Notre Dame," which stands supreme among pictures of that grand old structure. That implies no derogation of the impressions of the same cathedral given us by other artists: Rochebrune, Toussaint, Haig, T. F. Simon, Béjot, Chahine, Webster, Wm. Walker, Plowman, E. L. Warner, Hornby.

All of this brings us back to the original statement that in architectural subjects, as in any other, it is the etcher who counts, his attitude toward his subject, what he sees in it, what he expresses to us, and the manner in which he expresses it. Which, after all, constitutes the basic elements of all art.

Furthermore, even in this summary survey there may be, in the mere indication of the wealth and diversity of material, a hint to the architect. What opportunities there are for him who wishes to acquire for his walls pictures of fine examples of the art which he practices! Pictures which show the impression of architectural masterpieces on an artistic individuality working in another medium. After all, architecture, like any art, may be characterized, at its best, in Ruskin's words as "giving noble grounds for noble emotions." It is precisely that which we see exemplified in architectural etchings, where the product is the inevitable measure of the etcher's ability to enter into the spirit of a structure and to reflect it in an impression purely personal. In that lies the value of his art.



THE RIVA, NO. 2.
Etching by Whistler.



Red Cross Headquarters

At Washington, D. C.

OVER the main entrance to the National Headquarters of the American Red Cross at Washington, D. C., which faces the White Lot, one of the public reservations, is the inscription: "A Memorial to the Heroic Women of the Civil War." The building is the fruition of a suggestion by the late Major General Francis C. B. Barlow, who had expressed the wish that some day a monument should be erected at Washington to the heroic women who cared for the sick and wounded during the Civil War. Among these women was the wife of General Barlow. Talking one evening, shortly before his death, to his old comrade-in-arms, Captain James A. Scrymser, of New York, General Barlow told of his hope. Later, in 1911, Captain Scrymser laid the plan before the Commandery of the State of New York of the Military Order of the Loyal Legion of the United States.

The Loyal Legion heartily approved the idea, and in 1912, during the administration of President Taft, a bill was presented to the United States Senate which appropriated $400,000 towards the purchase of a site and the erection thereon of such a memorial, provided that not less than $300,000 be contributed. On the suggestion of Captain Scrymser it was provided that the use of the building be given in perpetuity to the American Red Cross.

Miss Mabel Boardman, at that time executive head of the American Red Cross, brought the subject to the attention of Congress in 1912 and in 1913; and in October, 1913, the bill was passed and was signed by President Wilson.

Contributions to the amount of $400,000 were promptly secured by the Red Cross. Captain Scrymser and the Rockefeller Foundation each contributed $100,000, Mrs. Russell Sage gave $150,000 and Mrs. E. H. Harriman $50,000. Mrs. Adolphus Busch gave $15,000 for the interior finish of the assembly room, and Col. A. C. Kaufman and Mrs. Morris K.

Jessup each contributed $100 toward interior work. All of these amounts were secured before the laying of the corner stone. Messrs. Breck Trowbridge and Goodhue Livingston, of New York City, were selected as the architects for the building.

In March of 1915 the corner stone was laid and a little over two years later, in May of 1917, the dedicatory exercises were held. The building is of pure white marble, and over the main stairway is a marble tablet with the words:

A MEMORIAL

Built by the Government of the United States and Patriotic Citizens

To the Women of the North and the Women of the South, Held in Loving Memory by a Now United Country, That Their Labors to Mitigate the Sufferings of the Sick and Wounded in War May Be Forever Perpetuated, This Building Is Dedicated to the Service of the American Red Cross.

Above the window, on a broad ledge, are three busts by Hiram Powers, symbolical of Faith, Hope and Charity. The spacious assembly room is finished in the Colonial style. A three-panel window, which forms more than one-half of the north wall of the room, opposite the entrance door, is of favrile glass and of unusual beauty and interest, typifying as it does the whole thought for which the building stands—ministry to the sick and wounded through sacrifice. It was Miss Boardman, of the Central Committee, who suggested the idea to the organizations of the North and South who cared for the sick and wounded of the Civil War, and these organizations accepted the proposition. The cost of the three panels was $10,000, and the Women's Relief Corps of the Grand Army of the Republic contributed $5,000 from funds on hand, while the United Daughters of the Confederacy gave an equal amount raised through popular appeal. Mr. Louis C. Tiffany, the well-known ecclesiastical artist, designed the window after suggestions by Miss Boardman and Hon. Elihu Root.

The central panel takes one back to the days of the crusaders, showing the army of gallant knights with their horses and spears. In the middle foreground is the standard bearer on his white steed, decked with jewels and carrying a large white flag with the Red Cross emblem. On the ground near him is a faithful comrade, supporting a wounded warrior who has fallen from his horse. While the whole scene suggests life and action, emphasis is given to the central thought that, in the onrush, time must still be found to minister to the fallen.

The women of the North gave the west panel, which shows Saint Filomena surrounded by an army of women symbolizing virtues. The first of these carries a shield decorated with the Red Cross, and is followed by Hope, bearing a banner with an anchor, Mercy with her gifts and Faith carrying a torch and palms, and Charity offering a healing draught.

The east panel is the gift of the women of the South. It also tells the story of noble women and noble deeds. The graceful Una from Spencer's "Fairie Queen," is the central figure, with her apron filled with roses, reminding one of St. Elizabeth. Una is the personification of Truth and Fortitude.

This three-panel window, taken as a whole, occupies perhaps a larger space than any other window of modern times.

In late January, 1917, the building was first occupied. Soon afterward the diplomatic relations with Germany were broken off and the enormous expansion of the work of the Red Cross began. Without the National Headquarters it is difficult to imagine how the work which devolved upon the organization would have been accomplished.

In May of 1917, with the appointment of the War Council, the building became a beehive of activity, every room, even to the attic and cellar, coming in for crowded use. Almost immediately it was apparent that the space was inadequate and a temporary annex was added, the building being in construction exactly twenty-four days, from May 15 to June 19, 1917. The first temporary annex contains 18,000 square feet of floor space.

The initial cost, approximately $52,000, was borne by two members of the Red Cross. In January and February of 1918 the congestion again became so great that it was necessary to add another three-story temporary building, and this one, containing more than 20,000 square feet of floor space, was erected and occupied in less than thirty days. A red brick building which had stood on the grounds was also taken for office purposes, and now still another annex, the last being a permanent structure, has been added, making five in all, connected by covered passageways. About a thousand persons are working at the headquarters.

The buildings are used solely for administrative purposes. They are the head of the American Red Cross, while the heart is found among the people who are working through their chapters in the fourteen Territorial Divisions into which the work is divided. It is this great heart that will throb with the beginning of the Christmas Roll Call of the Red Cross, when the membership books will be opened and every man, woman or child of the country will have the opportunity to add name and membership fee to the rolls. The membership fee is one dollar, half of which is retained by the chapter for local work, and the other sent to the National Headquarters for distribution. As not a cent raised for war relief is ever used for operating purposes, everyone can readily see that a large membership is necessary now, if the wheels which keep the great work going are to be kept in motion. The date of the roll call is December 16 to 23.



CENTRAL PANEL IN WINDOW OF ASSEMBLY ROOM.

THE GOVERNMENT'S HOVSING ACTIVITIES



By Sylvester Baxter

ONE of our Government's great war problems has been how to assure the most efficient activity in manufacturing the multifold things needed for munitions and supplies, from ships to cartridges. Every existing industrial center in the country was engaged in this work, and new centers had been created for the purpose. A chief impediment in the work was the impossibility of securing workers in sufficient numbers and quality. The labor-turnover was enormous; the prodigious losses in time, money and energy from this source were fairly incalculable. The great want of homes for the workers near their work was at the root of the trouble. It was realized that they must be able to live decently, according to the standards to which they were accustomed; otherwise they would seek jobs where the situation was better.

The only recourse was for the Federal Government itself to meet the need. Building conditions in general had made it impossible for private enterprise to undertake the work. An investigation undertaken by the various branches and departments of the Government concerned led to the creation of an effective organization for the task. Furthermore, the Shipping Board had the funds necessary for starting the work of housing near the shipyards; yet it still lacked the legal authority to employ them for the purpose. As for the industries producing war-materials, neither money nor authority was available for supplying homes for the workers. The immediate enactment of legislation necessary to these ends was urged upon Congress; yet several months passed before the bill was passed. The Housing Act was signed by the President on May 16, 1918. The authority thus conferred as to war-material industries was vested in the Department of Labor. Its Bureau of Industrial Housing and Transportation was organized in June, and work on a nation-wide scale was promptly taken in hand. Since the workers to be accommodated were employed upon contracts for the War and Navy Departments, both departments were represented in an advisory capacity in the directing of the Bureau. The Shipping Board, having the means at hand, was able to act on its own account before operating independently through its own Division of Housing and Transportation, but in close cooperation with the Labor Department's Bureau of like name. Much of the Shipping Board's work is done through a local housing company. In carrying out the housing program of the Department of Labor the participation of local interests was at first looked for—a local organization to contribute part of the funds, to assume the management of the properties during the war period and to take title to them upon repayment of the money advanced by the Government. This participation, however, might have complicated operations, and a clean-cut Government scheme was for various reasons found advisable. Hence the procedure is for the Government to build, own, control and rent all the industrial housing which it creates during the war. After that, the permanent status of the properties will be decided.

The freedom of action needed, to be rid of the danger of possible red-tape entanglements, has wisely been assured by the creation of the United States Housing Corporation as a corporate entity and an adjunct to the Bureau of Industrial Housing and Transportation of the Department of Labor. The Housing Corporation thus becomes the operating instrument of the Bureau. In its Emergency Fleet Corporation the Shipping Board already had a like instru-

mentality available for the purpose. One exceedingly important aspect of the creation of such legal entities lies in this circumstance: Property directly owned by the Federal Government is non-taxable. But since the ownership here is vested in a corporation this makes possible the payment of reasonable taxes to the municipalities and States that cooperate with the Government in its new developments—a consideration mutually advantageous.

This entrance of the Federal Government into activities customarily viewed as of purely local concern, and involving operations of vast magnitude, may be regarded as fairly epochal in its relation to questions that have been under discussion for at least two generations. The appropriation at first apportioned to the Bureau was for $60,000,000. Ten million of this was assigned to meet the urgent needs for housing that had arisen in the District of Columbia. A second appropriation has increased the total to $100,000,000. To carry to completion some of the plans already made and regarded as still falling short of meeting existing needs further large sums will be required. The amount involved in the work near the great shipyards undertaken for the Emergency Fleet Corporation is $100,000,000, represented by two appropriations of $50,000,000 each, making a total expenditure of $200,000,000 for the housing operations of the Federal Government now in hand.

The impossibility of relieving every community where there is a housing shortage has made it necessary to require certification from the branch of the Army or Navy concerned in the fulfilling of war contracts in such a place that additional housing there is absolutely essential. Investigations are also made to see if a situation cannot be relieved by inducing owners of existing homes to accommodate war-workers in their houses; also to see if the improvement of local transit facilities may not greatly help by transporting workers to more remote sections where they can find housing accommodations. This part of the work accounts for the second half of the designation: Bureau of Industrial Housing and Transportation. The outlay of many additional millions for housing has thus been saved.

The organizing of the Housing Corporation has been characterized by uncommon sagacity, with a resulting competence and efficiency. Moreover, it shows that such work may in quality and in economy compare favorably with private work of the same class.

In the first place, the work is done by a corporation. Although the United States Housing Corporation is strictly a public corporation, in management and in methods it has as much freedom of action and efficiency in conduct as any privately owned great public-service corporation. In one particular it has the advantage: it does not have to assume large legislative expenses and pay big lawyers' fees to protect itself, or for other ends, in dealing with the public. Pains have been taken to secure the most competent and highly trained men, experts of high standing, to direct and administer its affairs. And all these men, out of public spirit, have foregone large professional incomes to conduct this work for low pay.

At the head of the corporation, its president, is an engineer and builder of national reputation—a man of masterly executive traits: Otto M. Eidlitz, of New York. Its vice-president is Joseph D. Leland, 3d, the Boston architect. The general manager is also an architect: Burt L. Fenner, of McKim, Mead & White. The Operating Division, which has to do with upkeep and the generally sociological side of the work, is in charge of Allan Robinson, of the City and Suburban Homes Company of New York. Frederick Law Olmsted, the younger, by reason of his great work on the plan of Washington and other notable achievements, is the logical man for Chief Town-Planner. The Chief Engineer is John W. Alvord, of Chicago. The Manager of the Construction Division is Daniel T. Webster, the engineer. William E. Shannon, of Washington, is manager of the Real Estate Division.

The Housing Department, Division of

Production, of the Emergency Fleet Corporation, is in charge of the Philadelphia Engineer, B. Antrim Halderman, as Chief Town-Planner. Frederic L. Ackerman, the New York architect, heads its Design Section. Another New York architect, Robert D. Kohn, is in charge of the Production Division.

For this vast work the needed talent, by remarkable good fortune, was available in good measure. This circumstance has saved it from constructing what would have been little better, except in degree, than huge camps for artisans in the neighborhood of the works—at the best, assemblages of barracks and of houses turned out in uniform batches as monotonously depressing in aspect as the outskirts of Philadelphia and Baltimore. Instead, we are assured the creation, all through the country, of numerous model communities, beautiful to behold, convenient and comfortable to inhabit, more permanent in character than any "additions" any American city has ever before known, and setting an example that cannot fail to have a lasting and beneficent effect in shaping the future of American domestic and social life and commensurately raising its standards. Only a few years ago such aims would have been called "Utopian" and correspondingly impracticable.

This happy outcome has been made possible by the circumstance that within the past ten or fifteen years what is practically a new profession, akin to, and allied with, architecture, has come into being. This profession has here found an unparalleled opportunity for exercise on a magnificent scale. Its American beginnings date with the Columbian World's fair of 1893 in Chicago, and its fundamental planning by the senior Olmsted—a work of genius. An excessive individualism had been a fault of architecture as practiced with us. At Chicago our architects learned for the first time the value of team work. Out of this grew the widespread interest in town-planning. Then came the splendid plans for the improvement of the nation's capital and the assurance of their realization to an unlooked-for extent. Many projects followed for a corresponding improvement of leading cities all over the country. A large proportion were architectural pipe-dreams, concerned more with embellishment than with logical development from fundamental circumstances and little less visionary than the academic *projets* of architectural students. But out of this enthusiasm has gradually grown a capacity for a practical application of these principles along with a steadily growing demand for services of the sort in the development of large undertakings. The profession of landscape architecture, mostly concerned with aesthtic values, here came into the field; our landscape architects, by virtue of training and experience, became also the professional town-planners, in close cooperation with architects. Probably the most extensive and comprehensive scheme of this sort developed in this country after the Washington plans was that of 1909 for Metropolitan Boston.

The predominating influences upon the shaping of the art in this country came from the important town-planning movements in Great Britain and Germany. That of Great Britain has borne fine fruit in the creation of "garden cities," "garden suburbs," and the like. The rise and growth of the profession in Germany came with the phenomenal demand for providing for the expansion of cities and towns into large industrial centers. Our American town-planners have studied and assimilated the methods and the ideals thus developed and now, in large measure, have bettered the instruction—by an irony of fate turning their "made in Germany" acquirements, in this, their magnificent task, against Germany herself as a potent instrumentality for efficient warfare. One wonders whether the art may not come into use there, also, in the regeneration of a ruined nation, as it will in the rehabilitation of devastated France and Belgium.

In these housing-projects numbers of our ablest practitioners have found gratifying opportunity for the exercise of one of the most attractive phases of their art on a scale of unprecedented magnitude.

In shaping its activities the Bureau of Industrial Housing and Transportation sought the counsel of many of the most eminent authorities on housing questions: builders, engineers, architects, town-planners, and sociologists. In consequence the work was most intelligently organized. The housing standards to be followed were set. Nine types of buildings were found necessary to meet the requirements of workers: single-family houses; two-family houses; single-family houses with rooms for lodgers; lodging-houses for men, and the same for women; hotels also for men and for women; tenement houses and boarding-houses. The single-family houses were to be either detached or semi-detached. To accommodate families of different sizes the dwellings were to vary from three to five rooms. General provisions for planning were prescribed. No houses were to be more than two rooms deep. There were to be basements, closets in bedrooms, gas for cooking, electric lighting, no board fences, but open metal for separating backyards and hedges for continuous boundaries; house-plans were to provide for easy moving of furniture, and in the bedrooms locations for beds and for two other pieces was to be planned for. As for gardens, allotments were to be preferred to backyards.

In construction, local materials were to be preferred, with substantial things like brick, terracotta, stone or concrete rather than wooden frame buildings, and with fire-resisting roofs. These requirements would largely reduce depreciation. All rooms, including bath and water-closet, were to have windows. Water-closets, baths, and hot and cold water were required. For row, or group, houses there were to be rear entrances from public ways of 12 feet minimum width; no private alleys. None of these requirements were inflexible; they might be departed from under certain circumstances. Detailed items were set forth as to what was requisite for each type of house.

It was laid down that provisions for workers must be suited for a healthy, efficient and self-respecting community; but in each case these results must be obtained at a minimum cost. The good appearance of each development was also held to be a necessary and important consideration, and it was wisely required that it was to be obtained by an efficient and restrained design and arrangement of the houses, streets, open spaces, parks, and other features necessary for economic reasons, and not by any expenditure of funds purely for decorative purposes. The beauty and charm of much of the work designed on this basis indicates how much greater a factor in esthetic values is this principle of organic development than any effect reached by non-integral embellishment.

Each project is entrusted to a committee of designers; usually an architect, a town-planner and an engineer. The architect, on account of his more intimate relationship to the housing element itself, is commonly made chairman of this committee. Coordination of these three functions is looked for: the engineer preparing the ground, the town-planner developing the fundamental design from the topographical circumstances and also shaping it according to the housing requirements of the task in hand, the architect completing the pattern with his structural shapements. Each designer is therefore expected to keep himself informed as to what is done by his colleagues and to be free at all times to make any suggestions that may occur to him. Good team-play for efficiency's sake is the keynote here. Careful instructions to the designers as to their functions are given; also to investigators and surveyors. Standardization of housing-units and their equipment is demanded as far as possible; this naturally effects large economies as well as enables the use of high-class material produced in quantity.

The analogy between music and architecture is strikingly illustrated here. On the basis of only fifteen notes incalculable musical combinations are developed, making possible an infinitude of melodic and harmonic effects. Likewise, out of a few units wrought from standardized elements (nine or ten types of dwellings,

in this case) endless varieties of combination are possible, thus developing compositions of ever varying architectural beauty, according to the talents of the designer.

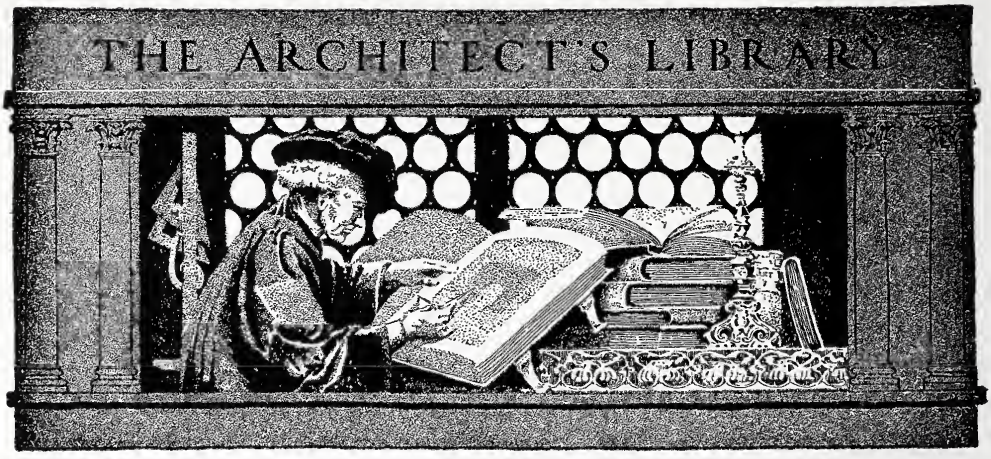
The efficiency with which this housing work is conducted, with the assurance of maximum values in return for these vast expenditures, is illustrated by the procedure in regard to purchase of sites. When it is learned that housing is needed in a given community two investigators are sent to look over the ground, examining not only the site suggested, but also picking out some other suitable site. A third investigator follows. If he finds that additional homes are not actually needed, the project is dropped. If housing is shown to be necessary, thorough steps are taken to ascertain actual land values there. A special commission of five is then sent to investigate: an architect, a real estate expert, a town-planner, and a civil engineer. The information being thus obtained, the question of purchasing is taken up. A "negotiator" is sent to arrange for buying the needed land. He then buys what land can be had at a fair price; if the owner refuses to sell for reasonable figures, the land is simply requisitioned at a price fair both to the Government and the owner. The Housing Corporation now has the right to condemn land necessary to its purposes. At first this right could not be exercised even by the War Department in buying land for cantonment sites.

In its suggestions to town-planners the Bureau lays stress upon facilities for effective self-respecting living and work. If they are already provided by the community, sufficient in kind and amount, and accessible from the new housing, the design should be related to them so far as necessary. If they be lacking, steps should be taken to assure their provision, so that when the houses are ready for occupancy, the schools, playgrounds, stores, amusements, etc., shall also be ready in reasonably sufficient amount and reasonably accessible. How far these things, essential to the service and well-being of the workers, are to be provided by local authorities, or how far by the Housing Corporation—and how far, when provided by the latter, the cost is to be apportioned as a capital charge against the houses and lots, thus raising by so much the purchase price or rental requirement to meet the cost of each dwelling—is to be determined in each case by the Corporation.

The appropriation for the purpose represents the cost of a development. The number of houses to be built is roughly determined in the light of the Corporations' decision as to what types of people are to be housed and its knowledge as to the cost of houses of the appropriate types. The task of the committee of designers in charge is to devise the sort of development of land, utilities and buildings to the end that the people shall be accommodated at the least possible total cost per family.

A development, or an entire project, is commonly constructed as a whole by a single contractor. The procedure here is such as to avoid the wastefulness and extravagance of the "cost plus" method and obtain full value for the money expended. The bidder who offers the most favorable terms on a total of four points is selected. He receives a fixed and adequate contractor's fee.

In all this work the interests both of the worker and of the Government are safeguarded. The worker, while getting the full value of his money, and well rid of paying a profiteering landlord or jerry-builder for inferior accommodations, pays full value for what he gets. The Government gives nothing in excess of cost out of its expenditures and is repaid for its trouble by the greater efficiency of its workers.



SOME RECENT FRENCH BOOKS

By BARR FERREE

THE thesis maintained by M. Emile Mâle in his valuable comparison of French and German medieval arts,* that medieval art had its origin in France and received its utmost development in that country, while the Germans made but a poor hand in copying, is not new. It is, in short, no longer debatable, for the overwhelming supremacy of French medieval art, in architecture, in sculpture and in other forms has long since been recognized by candid observers. But it is useful to have the problem stated anew by so competent a critic and so graceful a writer as M. Mâle. He brings to his writing table a vivaciousness of mind and a keenness of observation that give fresh interest to even the oldest topics.

It is well, moreover, in these days when the Germans are putting forth the most impudent claims to supremacy in every conceivable thing, to have so fine and so complete an answer to their preposterous claims for art supremacy as M. Mâle has given us. His book has not the thunderous qualities of a long-distance cannon, for it was written before the unhappy days in which those murderous instruments were brought into use; but it has the lightning-like rapidity of the "75's"—sharp, swift, cleanly destructive in its effect.

The Germany of the past, he says, has imitated, not created; and every page of his book is alive with demonstrations of this fact. Even the earliest German art, so-called, the sword of Childeric, found at Tournai, the armor ornaments attributed to Theodoric, found at Ravenna, the Visigothic treasure recovered at Toledo, and other objects, all having certain common elements of decoration, and all eagerly hailed as of German origin and invention—by Germans—are shown to have had Persian prototypes, so that any claim for German originality is at once disposed of. M. Mâle touches briefly on other phases of supposedly barbaric German art, and shows that they, too, had readily recognized non-German sources. The German claims of originality at the very beginning of artistic endeavor has thus been quickly disposed of.

In architecture we stand on more familiar ground, for the architectural monuments of Germany and of the rest

*Emile Male: L'Art allemand et l'art français du moyen age.

of Europe are well known, and if many of the earliest have disappeared, descriptions and references to them in early writings give ample evidence as to date, and not a little material for visual reconstruction. The characteristics of German Romanesque architecture are shown to be of readily established foreign origin. The typical German plan of a church with two opposed apses was known in France in the abbey church of St. Riquier, near Abbeville, long before it appeared in Germany. The decorative features of shallow pilaster-buttresses, open arcaded galleries at the summits of the apses, and the cubical capitals—all long claimed as exclusively German—are actually of Lombard origin, and were borrowed from Italy. The alternating support of pier and column within the church is also of Italian origin, since it is known to exist in Italian churches of earlier date than the supposedly early German buildings. To the difficult question of the priority of vaulting M. Mâle makes the same answer. The Germans borrowed it from Burgundy. He sums up the whole matter by pointing out that the foundation of German architecture is Carolingian, and that for five centuries the Germans copied the churches of the France of Charlemagne; the Lombards gave them the interior rhythm and decoration and the French showed them how to build a vault and erect a façade. It is true enough that some German claims can be supported by twisting the chronology of sundry monuments, but no one now places any dependence on German-made chronology.

In claiming a German origin for Gothic architecture it might seem to any modern student that the Germans were sadly handicapped by readily ascertained evidence to the contrary. But the surprising number and beauty of Gothic edifices of actual French origin, since they were in France, did not disturb the German pundits at all. By modestly claiming that Gothic buildings in France were erected by German workmen, they both solved any awkward questions of chronology and afresh established the supremacy of the German claims. This astonishing doctrine has been solemnly preached in Germany for years; it need hardly be said that in M. Mâle's graphic pages he admirably marshals the salient facts in French and German Gothic chronology, and shows how utterly baseless the absurd German claims are.

Problems relating to architecture are discussed at some length in this book, but other forms of art receive due attention. M. Mâle shows, with great lucidity, the dependence of German medieval sculpture on French sculpture, and adds an interesting chapter on the origin of engraving, once more demonstrating the priority of the French masters over the Germans in a field in which, popularly, the latter are often supposed to have been the leaders The book appropriately closes with chapters on the cathedrals of Reims and Soissons, the two great French Gothic churches that the Germans have so persistently injured. It is indeed fitting that a survey of the art achievements of these overbearing people should conclude with a well-ordered and temperate discussion of two great monuments they have sought to destroy for no other reason than that they helped to point the less on both of German inferiority in art and of the immeasureably greater French achievement.

* * *

M. Brutails' little handbook* is admirable in every way. Few books of its size are so closely packed with information; yet while essentially a book of facts, it is eminently readable, and is, in truth, a brilliant survey of French architecture from the earliest times to the present day. Being a small book dealing with a great topic, the author has been well advised to omit any chronological or descriptive survey, and has, instead, adopted the topical method. He depends on his numerous small but excellent illustrations for the necessary descriptive complement.

He opens with a discussion of architecture in Gaul before the Romans. This is followed by chapters analyzing construction in the Gallo-Roman period, the Latin period, the Romanesque and Gothic

*J. A. Brutails: Pour Comprendre les Monuments de la France.

periods, and the Renaissance and modern times. Two chapters are devoted to an analysis of decoration, and the book is concluded with chapters on religious, military, civic, monastic and public edifices. The scheme is at once comprehensive and logical and follows the entire history of French architecture, which the ample illustrations make thoroughly clear. One may, indeed, regret that, where space was so restricted, any discussion should have been devoted to modern and contemporary work, especially to architecture in iron. The book would have been quite as complete and as thoroughly serviceable had such matters been omitted. But it was the author's idea to include them, and his book is so good and so well balanced that it is rather ungracious to suggest that any portion of it might have been omitted. As it is, it is one of the best and most serviceable surveys of French architecture. It is a pleasure to commend it most heartily.

* * *

As "Chef des services d'architecture au sous-secretariat d'Etat des Beaux-Arts," M. Paul Léon has long been identified with the work of the Commission des Monuments historiques, which he has directed for the last ten years. He brings to his book* the prestige of high office, the advantage of intimate personal acquaintance with his subject, and the skill of an accomplished writer. His topic is, indeed, most fascinating, for what more agreeable work can there be than the care of the great historical monuments of France?

The scheme of his book is fine; for he not only tells what the Commission des Monuments Historiques has accomplished, but how it has been accomplished. His introductory chapters on the early tentative efforts at preservation and restoration are most illuminating, both in showing how really backward the French were in a realm in which they are now supreme and in pointing out what might have been done and what actually took place.

*Paul Léon: Les Monuments Historiques.

The Commission des Monuments Historiques owes its foundation to Louis Philippe and dates from 1830. But the question of the preservation of the historical monuments of France had long been considered by some few enthusiasts and in some senses goes back very much further. M. Léon quite rightly begins his book with a brief survey of conditions before the Revolution. In the earlier part of this period there was no such thing as preservation; buildings were added to or transformed in the taste of the day, and no one thought of doing anything else.

The seventeenth and eighteenth centuries were dire times for architecture in France. The fashionable idea of preservation was destruction. Priceless windows were displaced for plain glass; choir enclosures and screens were demolished, and the strangest ideas as to the significance of medieval sculptures came into vogue. A colossal amount of harm was done under the guise of restoration. These doings, however, were actually insignificant compared with the destruction carried out everywhere in the Revolution. It is impossible to ignore the dreadful destruction of that time, for its results are still evident.

Yet in the midst of this orgy the first steps toward conservation were organized. The absorption of ecclesiastical and feudal rights by the State was followed by instructions that the property must be preserved. A decree of October 13, 1790, prescribed certain measures of conservation, and this first step was followed by other decrees. From 1790 to 1795 the Commission des Monuments, then the Commission temporaire des Arts, undertook work that, a century later, fell to the Commission des Monuments Historiques. An effort was made to inventory the monuments of France, and some extended work, with most insufficient funds, was accomplished. Museums were established in various departments, of which the most notable was the celebrated collection of the Petits-Augustin in Paris, placed in the care of Alexandre Lenoir in 1791, and which later became the Musée des Monuments Français.

The establishment of the Concordat by Napoleon opened a new era. In 1810 a Government circular required reports on the dispersed works of art, a request renewed in 1818. In 1816 Alexandre de Laborde published his famous book, *"Les monuments de la France classés chronologiquement,"* which was the first of the *"Statistiques monumentales"* later published by the Government. National art engaged the attention of the authorities of the Louvre in 1824, and the Musée de Cluny was founded in 1843. Meanwhile books on French art were doing their task in awakening public interest in the national monuments. October 21, 1830, Ludovic Vitet was nominated inspector general of historical monuments. It was the dawn of a new era.

The story of the later development of this important work is best followed in M. Léon's own pages, where it is presented in a thoroughly detailed manner. There was always, as might be expected, a persistent lack of funds; but the first work was the making of an inventory of historical monuments: 880 appeared in the list of 1840; 1,702 in that of 1900. Since then the increase has been much greater, 1,865 names having been added between 1908 and 1913.

The work of the Commission was by no means limited to classifying monuments and placing them in the restricted list. Buildings and other works of art had not only to be classified and determined, but preserved and conserved. The rights of private owners in civic structures had to be considered and adjusted. Adjoining structures often had to be acquired and removed in order to ensure the preservation of a designated building. The complicated question of the restoration of structures requiring it not only absorbed the attention of the Commission, but required the expenditure of vast sums. Many new problems followed the adoption of the Law of Separation, which so acutely affected ecclesiastical edifices. A great Government department was organized to carry out these undertakings. All these matters M. Léon describes with abundant detail. His book is most interesting in telling what has been accomplished by the most efficient body in the world dealing with the many complicated problems committed to its care. It is true enough that mistakes have been made, and one may not always agree with what the Commission has done; but of the general value of its undertakings there can be no doubt. M. Léon's book is a fine tribute to the general excellence of its work.

* * *

The highest compliment—and it is a very great one—that one cay pay Professor Bréhier for his book on Christian art* is to say that it is worthy to stand beside the magnificent monographs on medieval art by M. Emile Mâle. The ground covered by the two writers is quite different, for while M. Mâle confines himself to French medieval art, Professor Bréhier covers the whole field of Christian art from its beginnings to the present day, and even goes further in some concluding speculations as to its future. It is not too much to say that it is the best general handbook of Christian art yet produced.

Christian art, as a Christian expression, is far from being understood or appreciated in America. This is doubtless because we have no traditions of our own, and hardly any examples, except in some few recent churches, in which art is used as a decoration, and not at all in its ancient sense as a means of inspiring devotion or of teaching religious truths and doctrines, as should be its real purpose.

Christian art only reached America after it had been fully developed and had entered into a period of decline. One must go much further back than the beginnings of American history to appreciate it and learn to understand not only its forms but the circumstances under which it was produced and the purposes and aims it sought to accomplish. This means going far afield in the study of the records, and it means becoming familiar with ideas far out of touch with the present day.

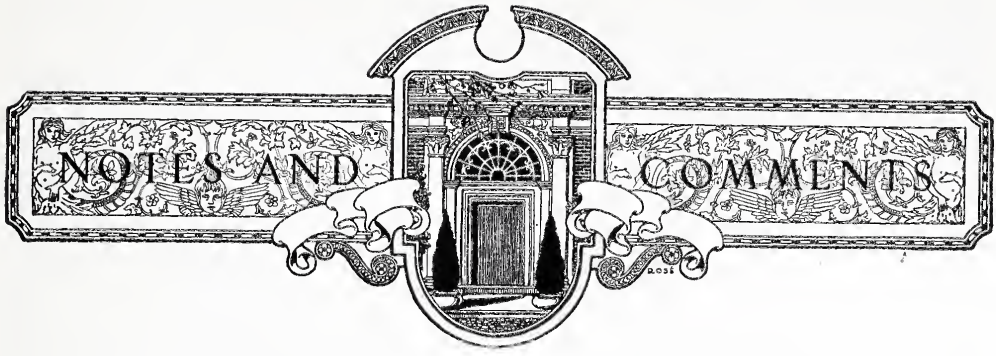
The value of a book like Professor Bréhier's is in marshaling these little

*Louis Bréhier: L'Art chrétien.

understood facts in an orderly way, digesting the whole history of Christian art in its manifold developments in the East and West, and presenting a continuous narrative in which each special manifestation, each new influence, each fresh development in Christian teaching is duly noted. All this he does admirably. His theme is a vast one, for the whole history of art to the time of the Renaissance is the history of Christian design and building. It is impossible, for example, to consider the development of Byzantine or medieval art apart from the religious conditions under which they were produced.

To the sixteenth century two great subjects absorbed the attention of the people of Europe: war and the church; and of these two the most absorbing was the church. It not only dominated thought, but it touched on almost every aspect of daily life. The cathedral, the monastery and the parish churches were the centres around which the life of their communities revolved. The sculptures and painting with which the sacred edifices were adorned were not decorations at all, but visual expressions of holy doctrine, giving instruction to an unlettered populace, and affording inspiration and information to those who could not read. Fortunate folk, they, that in the golden epochs of Christian art so much fruitful teaching was conveyed in such marvellous form. We who, today, view a painting or a statue with interest, because it is a well-executed work of art, are indeed living in a degenerate age that understands the purpose and aims of Christian art not at all.

Hanbooks like Professor Bréhier's, in which this very important and highly interesting subject is presented as it ought to be presented, merit, therefore, the warmest welcome. His book is wholly without pedantry and without bias. He has no pet doctrines to bring forth, nor does he use his great theme to teach religious truths. He has produced a well-ordered survey of Christian art as Christian art; he shows himself on every page a thorough master of his subject and indicates a wide familiarity with his predecessors in special lines; he has embellished his book with an excellent series of illustrations, so carefully chosen that many of them are novel, or at least not well known; he has, in short, produced a most admirable book.



Art Education and the Industrial Arts

If beauty is to grace our industrial arts and virility mark their growth, the hand of the younger generation must be trained and its judgment developed through a carefully adjusted system of education founded on aesthetic traditions. The chief requisite of such instruction is manipulation of material, or "craftsmanship." Theory, ranking second, explains cause and effect in method.

As a science existing apart from practical instruction, education is a modern invention; it dates in England from the middle of the nineteenth century, when the awakening democratic spirit of the people demanded opportunity for mental culture as its birthright. Recognition of this claim by legislative bodies involved the creation of official departments of education, standardization of studies, and the employment of large forces of teachers trained on academic lines.

When, after a time, certain elementary branches of decorative art were added to the official curriculum, the conduct of studies and the compilation of text books were entrusted to departmental educators, who were temperamentally more inclined to theory than to practice, with the result that, whereas in previous ages practice had been the foundation and theory its argument, the new regime made theory the basis and practice the exponent of the theory.

The contemporary discovery of the principles of evolution exerted an influence in the wrong direction on the analysis of practice for educational purposes. The field of art impulse was subjected to scrutiny with a view to formulating, from selected examples, maxims of such nature that an equivalent for the spontaneous might be fashioned methodically. Classic examples of decorative art were dissected on the assumption that dismemberment reveals construction. It was argued that if the student were trained to seek the frame underlying the beautiful, by reflex process beauty might be systematically arrived at.

A fundamental reason why the effect of art education on industry has been negligible is the vicious academic influence, which is responsible for the general plan of studentship, for the angle from which problems are approached, and for the mental bias imparted to its training corps. The general policy of study has been governed by strangly impractical views.

For many years a premium has been placed by schools of art on a species of dilettanteism proceeding from a theory that genius should be unfettered by routine. Little importance was attached to the average percentage of geniuses among students, or to the observation that these have invariably created their own methods of assimilation. The acquisition of technique by discipline was discouraged through fear of cramping individuality, which is as plausible as to maintain that the born athlete risks loss of suppleness through physical training.

Cultivation of temperament at the expense of technique has been the curse of many educational institutions, corresponding to artificial stimulation of the nervous system in the adolescent at the expense of muscular development. This type of instruction aims to produce poets, but ignores syntax and prosody.

Another fallacy, long fostered, was that the most direct route to distinction in decoration lay in creating new types. However, experience has now led to a general concurrence of opinion that additional decorative species are superfluous; that, indeed, ingenuity can devise no type of ornamental structure or rhythm unrelated

to some recognized form of art activity. Though damage was done temporarily by the efforts of teachers to force originality, their failure has been instrumental in demonstrating that individuality has an existence independent of contour of detail or mass.

Few teachers of the academic type appreciate that undeviating precision in execution is as vital an element in art as in arithmetic, or that it is consistent with flights of fancy and freedom of rendering. Copying fine examples with the intent to discover and record every hidden beauty no longer holds the prominent place in study that it occupied in past ages.

The practical exponent of an applied art appreciates that interpretation constitutes one of the great problems of studentship. The capacity for interpretation is developed by estimating the relative values of those multiple qualities which are encountered in a phase of nature or in a work of art.

The elements of applied art education may be separated into three divisions: Practice, Influence and Transmission.

Practice comprises all activities relative to the acquisition of technical and manual skill, either in relation to manipulation of material or to the depicting of form in decoration.

Influence deals with the choice of, and submission to, standard authorities, the studious examination of which sets a worthy level for aspiration, enhances the quality of effort, and rectifies innate tendencies to inferior judgment in selection.

Transmission directs the application of abstract forces generated through "influence" to the problem in hand. By methodical system in discovering suggestive matter and converting it to practical purposes, production is rendered less dependent on chance inspiration and is safeguarded from repetitious treatment.

If we assume that influence is an element in a complete method of instruction in applied arts, we must consider how the system can be connected wtih the fountain head of influence—the museum.

When the great departmental system was founded at South Kensington to aid the craft-trades, the Museum constituted the pivot around which the original demonstration revolved. The school was located in the Museum, in order that habitual contact with beautiful objects might saturate the minds of the students, thereby instilling high ideals; appreciation being further stimulated by exercises in composition, based on chosen exhibits, prefixed by an explanation of historical, technical and aesthetic characteristics.

As the intrinsic worth of this educational experiment became apparent, manufacturing interests in the large industrial communities induced their municipalities to erect art schools under the departmental auspices, adding to the curriculum special courses for the aesthetic development of their local industries. The museum influence was introduced in all new branch schools, as an integral part of the system. In the majority of cases the funds originally raised were insufficient for the erection of a museum; this difficulty was overcome by the creation of a loan exhibit department at headquarters, which provided collections of objects, periodically changed. If the space for exhibition purposes was too restricted in the school, exhibition cases were placed in the public library, where students had facilities for sketching. As the groups of exhibits made a circuit, they were perforce of a heterogeneous nature, but the principal of each art school was authorized to select supplementary objects that might prove inspiring to those employed in the local decorative trades. By this means, youths in remote industrial centres who otherwise were unlikely to see historic examples of their craft were enabled to study them at their leisure, and were encouraged to make faithful and appreciative studies by the awarding of national prizes and medals.

This movement has grown to such an extent that it is doubtful whether any town can be found in the British Isles, of even 10,000 inhabitants, that does not boast its art school and museum.

As an instance of schools supplemented by museums devoted to the artistic development of the local craft, we might refer to the Seven Federated Pottery Towns, in each of which the school adjoins a museum, where excellent examples, admirably arranged, show the use of varying materials and decorative treatments throughout the history of ceramics. Should the commercial forecast sense a revival of Italian, French, Chinese or any other historic method, the designers and decorators find good representative examples at hand, in which they can study that spirit of craftsmanship which exists only in the original and which no process of printed representation has yet thoroughly conveyed.

In this country, where beautiful relics of ancient skill are inaccessible to the majority, there is urgent need for systematic

distribution of inspiring objects in industrial centres. The number of suitable objects available is wholly inadequate to meet the demand, and the question arises whether carefully edited replicas for educational purposes should not for the present supply the deficiency of originals. This was done extensively by South Kensington in the case of examples of the art of the goldsmith, of the silversmith and of the iron worker, of which excellent replicas were made that proved ample for the purpose.

To attain practical issues, applied art education must be frank in its statement of aims, cognizant of the actual motives of those seeking it, and direct in its methods of application. There is no necessity to regard applied art education, which is a vital adjunct to the highest form of industrial efficiency, from the altruistic angle. Its applicability and convenience in operation concern the producer as vitally as does his economic equipment. It should perform a definite function in fixing basic aesthetic standards and in training executants accordingly.

As a general principle, we must admit that the best energies of the majority are usually directed to those chosen activities from which personal benefit is likely to accrue. Of recent years a hypocritical prejudice has prevented practitioners of various arts from stating frankly that the material recompense for endeavor must as necessarily figure in their plan of life as it does in that of the business man. The majority of students employed in business undoubtedly regard study as the surest way to an increase of income. Is it reasonable to offer individuals actuated by so plausible a motive an educational system based on unrelated ideals, on inapplicable methods, and on the assumption that the study of art precludes mercenary motives?

Irrelevant studies grouped at random will neither attract nor retain the youth whose ambition causes him to sacrifice leisure to advancement. Practical reasoning provides him with standards of relative values by which he will estimate the utility of the educational plan. Daily observation demonstrates that a capacity to interpret efficiently the style-tendency of the day is a valuable commercial asset. The market for the decorative trades has very pronounced predilections concerning historic periods. Should the educational system ignore the existence or the claim to precedence of these preferences in style, the student will naturally conclude that its serviceableness does not extend to this field, in which he most urgently needs guidance. Hence, the direction of certain branches of study must be indicated by those cognizant of the trend of taste through association with industrial activity. Such a step need not entail any depreciation of educational aims, as experience in plan of design and structure of ornamentation can be equally well taught in any of the classics or their derivatives.

Provision must be made for a large proportion of students already engaged in some occupation who decide to learn an applied art as a new means of livelihood and who will depend on school instruction to acquire it. For them it is particularly desirable that demonstrating instructors be recruited from skilled exponents engaged in the art-trades, whose skill of hand is acquired and maintained through constant production of the best types of commercial work. By certain standards in manipulation, work is deemed acceptable or useless in all industrial fields. Demonstrators familiar with this basis of selection would make studentship a graduation to employment, and save the disillusionment that has so frequently followed years of academic study, when, employment being sought, the fact is revealed that a school technique has no place in the industry.

Craftsmanship lies in a great measure in the advantageous manipulation of physical peculiarities of substance, a knowledge not conveyable by lecture or text-books. This can be taught only by demonstration, as it varies in detail and method with the temperament, ingenuity, and manual aptitude of the practitioner. Individual ways of obtaining results are evolved by every natural craftsman; many of these can be learned in comparatively short time from a skilled exponent, by individuals who would be incapable of originating them in a lifetime.

The compulsory subjects in any branch of education are usually those inseparably connected with it, and on which it depends entirely for expression and development, as for instance, chemistry in certain sciences and mathematics in others. In the applied arts, the subjects which exist in this basic relation are the rendering of form and the practice of design. In every instance these should be compulsory, to precede or run concurrently with every section of general and specialized study. To permit such elements to be optional is contrary to every sound argument and record of practical experience. There is no other professional training in which study of the elements of practice is a matter

of choice. The student engineer or chemist is not asked to decide whether he considers mathematics likely to be useful. Drawing and designs are as vital to the one career as elementary science is to the other.

Ignorance of values is the greatest handicap to making judicious selection. It is, therefore, unfair to abandon immature students to the whims of their preferences, expecting that the laborious and irksome essentials will receive greater attention than the more diverting phases of study. Examination of the results from this method, and comparison with those attained by the fixed progression of the apprenticeship system, can leave no doubt as to whether the general plan of studentship should be regulated and controlled by experience or by youthful preference.

It is generally assumed that the direct beneficiary of the applied art educational methods is the manufacturer. As an objective he is remote—so remote that it has been extremely difficult for those laboring ostensibly for his welfare in educational fields to ascertain whether the intended benefits reach their destination. The American manufacturer is notoriously enterprising, availing himself of anything that has direct utility, regardless of the outlay of energy or treasure needful to secure it. Does it not furnish food for thought in academic circles that up to the present moment the manufacturer has been apparently oblivious to the extensive efforts made on his behalf? In a land where every utility has its market, where enterprise constantly seeks resources, we find a vital educational element supposed to furnish industrial efficiency, working with its back turned on its objective. Its existence is a matter of indifference to its supposed beneficiary, though the identical service which the system should furnish is procured with great trouble and expense in foreign lands.

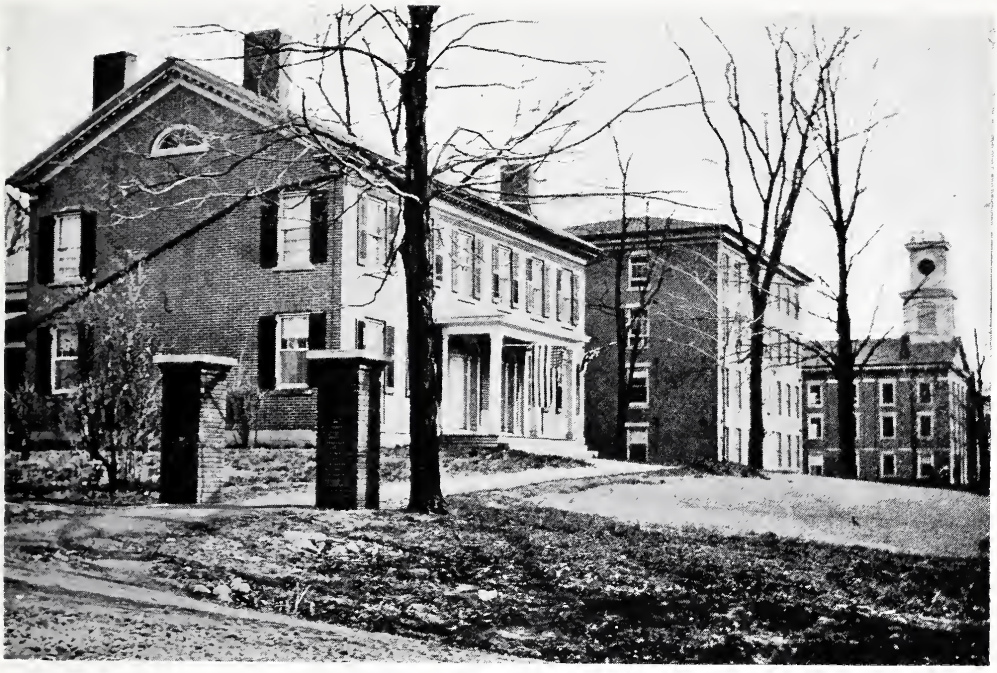
An educational method practically and systematically operated has much to give to industrial organization, and much to ask of it. It calls for recognition as a factor and a resource; it needs skilled demonstrators and prospective recruits. Its value to students will be measured by the assistance given toward attaining proficiency, and the material advancement resulting; its value to the manufacturer will be that it can be relied upon to supply him with workers of a class that has previously come from Europe, workers who after the war will be badly needed here and unprocurable there.

Mutual interests and objectives are concerned; the first step has yet to be taken—cooperation between teacher and employer. The manufacturer has standards to meet, definite requirements to fill, the observance of which means commercial success or failure. Many have ambition to equal the best in that abstract measure which they know to be the highest form of valuation, but which they are unable to reach unaided.

The teacher must equip the student to fulfill a mission in life; not to become an aimless wanderer in the suburbs of art. On termination of studentship, the student must be able to contribute a definite form of skill, be it in design or workmanship, together with the breadth of view necessary to transmit appreciation of beauty to actual handiwork.

In summary, many industries today are striving after the highest tradition of their crafts; in the near future they will have to depend on native trained talent for the realization of their ideals. Cooperation must be established between art museum, factory and school of industrial art in order that the aim of industry may be held before the student and that the road to its realization may be shown through the fields of tradition, both in style and technique. There is neither time nor room for vagueness in such study, and elements known from experience to be essential must be enforced as the surest means to valuable results. The future of the American art industries depends in a great measure on the efficiency of the educational system available for the majority. Records of art history prove that its most brilliant epochs derive their lustre as much from the high average of the majority as from the works of their geniuses. A thoroughly practical system of education is the first need; not one based on theory, altruistic dreams or literary phrases, but on the experience of men who have travelled the road to knowledge as students and practitioners of the arts.

LEON V. SOLON.



A CORNER OF THE CAMPUS—WESTERN RESERVE COLLEGE, HUDSON, OHIO.

Old Western Reserve College.

Several years ago the Architectural Record published a series of articles by the late Montgomery Schuyler on "The Architecture of American Colleges." Compared with the great architectural groups which were considered in those articles, the plain little buildings shown herewith give interesting and touching evidence of the poverty and limitations of the pioneers who, in spite of the sacrifices involved, were determined to build the social fabric of their little settlements in the wilderness upon a foundation of broad intellectual training.

Foremost among the frontier settlements to establish institutions for higher education was the village of Hudson, Ohio, situated in the heart of Connecticut's Western Reserve. Settled in 1800, application for a college charter was made in 1801; but for some reason it was not granted until 1826, whereupon work was started immediately on the buildings and the first students were enrolled the same year.

The erection of the buildings was made possible by contributions of labor, building materials, farm produce, and limited sums of money from the settlers in the surrounding country, and so scanty were their resources that the most rigid economy was necessary. Most of the labor was performed by local men, but the interior trim of the buildings was the work of a man named Latimer, who was brought to Hudson from New York State. Several pieces of furniture built by him in his leisure hours are still preserved by old families of the town.

The institution, which was known as Western Reserve College, maintained so high a standard of scholarship and its faculty was so largely recruited from Yale that it was often referred to as the "Yale of the West," and its vicissitudes and early struggles form an interesting chapter in the history of its times.

Of the old buildings, those known as South College and Middle College have been destroyed. North College, which was completed in 1837 for the divinity students, is the four-story building shown in the group picture. The chapel was completed in 1835 and the observatory in 1838. The latter is said to be the second oldest observatory in the United States, and from it were taken many important observations, which have made the name of the observer (Prof. Loomis) famous in the



ENTRANCE TO DORMITORY.



INTERIOR OF CHAPEL.

annals of astronomy. Other buildings, including faculty houses were mostly of later date.

Eventually, in 1882, the college was removed to Cleveland, the name at that time being changed to Adelbert College; and eventually it developed into what is now known as Western Reserve University.

The old buildings at Hudson were used as an academy under the control of the University until 1899, when it was abandoned and the buildings fell into decay.

Finally, three or four years ago, a former graduate of the college provided funds to restore such of the buildings as were still in a reasonably good condition and built on the site of old "South" and "Middle" colleges a new school building in harmony with the old.

It was natural that the architecture of an institution founded and fostered as this was in a community possessing such limited resources should reflect the simplicity and austerity of its founders.

Coming as they did from New England, we find that they brought with them the traditions of architecture which their parents or grandparents in turn had transplanted from their former homes in old England. So we find in these old college buildings of the Western Reserve a reflection of the spirit of the New England Colonial, shorn of all that might be considered superfluous, but still, in spite of extremely meagre opportunities for architectural effect, bearing the impress of classic origin.

I. T. Frary.



OBSERVATORY.

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